

Permeating the wall

Permeating the wall: Transmitting knowledge remittances as a strategy for health information
campaigns in The Republic of Moldova

Margaret A. Fesenmaier

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James D. Ivory, Committee Chair
Yi-Chun (Yvonne) Chen
Bartosz W. Wojdyski

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ABSTRACT

The Republic of Moldova is losing many of its citizens to more lucrative economic opportunities abroad. Remittances from emigrants, in many various forms, have become vital agents in the Moldovan economy. This thesis investigated whether remittance activity among immigrants from Moldova in the United States and Canada might be used as a model for an effective strategy to spread public health information amongst Moldovans. Specifically, two studies examined whether remittance behavior among Moldovans living in The United States and Canada predicted their perceptions that a “knowledge remittance” strategy for public health information would be effective and their interest in participating in a knowledge remittance effort. Grounded in the extended Technology Acceptance Model (TAM2), two studies evaluated the remittance relationship. Study 1, an exploratory online survey ($n = 15$), indicated that Moldovan immigrants living in the United States and Canada that have a generally positive attitude towards capital and knowledge remittances will tend to perceive the transmission of knowledge remittances as useful. There was tentative support for the correlation of perceived usefulness with the intention to remit knowledge. Study 2 ($n = 5$) consisted of qualitative interviews and found that Moldovan immigrants living in the United States and Canada have access to the Internet and frequently use the technology to contact family in Moldova at home. Interviewees had a generally positive view of both capital and knowledge remittances, though they were in disagreement on the major health risks facing Moldova. The findings of these studies suggest that a remittance propagated health campaign is a possible resolution to poor health knowledge in Moldova.

Keywords: Remittance, Moldova, TAM2, technology acceptance model

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As a volunteer with The United States Peace Corps in 2010, I was placed in a relatively large, relatively affluent village in northern Moldova near the Ukrainian boarder. More than a quarter of Corjeuti's population leaves annually to work abroad. Most sojourners are mothers and fathers working abroad to send money home to their children who had been left with distant family members. These children, many of whom I saw in my weekly health lessons, had fashionable clothes and the newest cell phones. However, few had curfews, motivation to do homework, or rules in the home.

During my service, a community member who was working abroad in Austria donated ten used computers to the school and the mayor allocated just enough money for a somewhat reliable Internet connection. One day during a lesson on tuberculosis with my 7th grade health class a student turned me and said, "Doamna Maggie, that may be how Tuberculosis is transmitted in America, but here we must not drink too much cold water." Despite my instance that frigid water was not a transmission source of the disease, the class continued to believe the myth of cold water. With my Moldovan work partner, Rodica, in tow the class took an impromptu fieldtrip to the new computer lab.

I expected the students to circle around the main computer as I showed them, in Romanian, a website that stated the causes of Tuberculosis. Instead, immediately upon arriving to the lab the students dispersed, logged on to email and social media sites. They were giddy to "play" online while course. However, as I began directing them to google.ro to search for information on Tuberculosis the students seemed astonished that such information could be found online, especially in Romanian.

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When asked, each of my students reported regular Internet use. They played video games, used social media, watched movies, and most importantly contacted their parents living abroad. None, however, had used the Internet to research their homework or find prosocial information. And, throughout the lesson, only Rodica seemed interested in learning how to search for valid and reliable health knowledge.

The Republic of Moldova is a new nation—created in 1991 after the fall of the Soviet Union-- and one often neglected by world and European leaders. Historically, this region of Eastern Europe in which Moldova is situated has never boasted monetary wealth, and Moldova is currently the poorest country in Europe (World Bank, 2011). However, Moldova has a unique problem in that while it has the technological infrastructure to facilitate the spread of basic knowledge about health via the Internet, such a spread is not occurring. This thesis describes a pair of studies conducted to explore how the Internet may serve as a tool by which Moldovan immigrants may transmit knowledge back to the country of origin in lieu of domestic public health programs that have had heretofore limited success in Moldova.

The development of mobile communication technology has allowed some communities in developing nations to bypass the traditional needs of infrastructure to provide access to information resources via the Internet. One example of such innovation is the non-profit group *One Laptop per Child*, which developed and donated rugged and low-cost laptops that give children around the world an opportunity to access global resources to foster more effective learning. Recent studies indicate that this technology is eliminating the need for traditional infrastructure such as electricity, wired telephone or Internet connections, and power plants which are normally required for Internet access (Negroponte, 2006). Following this trend, Moldova has capitalized on such new and innovative communication

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technology to connect its population to the Internet. Indeed, while still a developing nation, Moldova is able to keep up with its more advanced neighbors (Romania, Bulgaria--both members of the European Union--and The Ukraine) in terms of proportional number of Internet users and connections (Open Net Initiative, 2010; World Bank a, 2011). Also important to the country's cultural and economic contexts is the fact that nearly one-fourth of Moldova's population lives and works abroad (Cuc et al. 2005; Pyshinka 2002) to send home money (i.e., remittances), which constitute one-third of the nation's GDP; this is currently the third highest per capita rate in the world (Ratha, Mohapatra, & Silwal, 2011).

Despite Moldova's proximity to Western Europe and its widespread wireless Internet access, the country has many health and civic problems that commonly plague developing regions. According to the World Health Organization Encyclopedia (2008), nearly 80% of the country currently lives in poverty and hosts high rates of many common health issues such as hepatitis and alcoholism (World Health Organization [WHO], 2008). Additionally, there are many civic issues including spousal and child abuse that are degrading the health of country's citizens (Hinrichsen, 2006). These social-health related issues can never be absolutely eliminated, but studies indicate that more widespread dissemination of knowledge and informational campaigns could substantially lower the damage they cause to the nation's health. Kuhn, Steinberg, and Mathews (1994), for example, found that an AIDS education campaign in a South African high school substantially reduced behavioral intentions towards the contraction of the disease, students were much more likely to accept prevention techniques.

The socioeconomic and cultural characteristics of Moldova—a somewhat poor and uninformed society with an established communication infrastructure—create unique circumstances upon which aid workers could capitalize to increase knowledge throughout the country. This thesis investigated the presumption that the transfer of information and knowledge, which this study operationalized as “knowledge remittances,” could follow a similar procedure to that of monetary remittances. This

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presumption is based on a study conducted by Gorlich and Trebesch (2008), which found that Mexican families who received remittances were more likely to also adopt certain types of agricultural technology. In an effort to understand how the remittance-based society of Moldova has modified the acceptance and use of the Internet as a tool for communication as well as to propose a possible mechanism for more effective knowledge transfer into Moldova, this thesis examined the possibility that public health knowledge can be sent from migrant workers in the United States and Canada to families living in Moldova in the same manner that money and other resources are typically remitted from emigrants to their families in Moldova. This work is based in the conceptual framework of the extended Technology Acceptance Model's description of (TAM2) factors affecting the acceptance of a new technology. The TAM/TAM2 has been tested and validated in many settings (Davis, 1989; Venkatesh, 2000; Baaren, Van der Wijngaert & Huizer, 2008) and predicts that the perceived ease of use and perceived usefulness of a technology will influence the behavioral intention to adopt the technology. Following the findings of Venkatesh and Davis (2000) and Gorlich and Trebesch (2008), this thesis explored the possibility that remittance activity is a social moderator that predicts the acceptance of the practice of using communication technology to remit knowledge in addition to money and other resources.

A two-step process was followed to test these hypotheses. In Study 1, an Internet-based survey was developed (adapted from Venketesh & Davis, 2000) to test a series of hypotheses regarding the relationship between Moldovan migrants' remittance activity and their attitudes and intended behaviors towards remitting knowledge back to Moldova. The online survey used a snowball approach targeting the population of migrant Moldovans in the United States and Canada, as well as recruiting via expatriate websites for Moldovans living abroad.

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In Study 2, the same concepts and predictions were explored with brief interviews were undertaken with Moldovan migrants working in the United States and Canada to explore the extent to which they provide technology that facilitates familial connections to those still in Moldova. Additionally, grounded in the theoretical predictions of TAM2, the exploratory interviews investigated the attitudes held by Moldovan migrants towards transferring knowledge through these technological connections.

Literature Review

Communication technology increasingly influences our daily lives, from better facilitating work—faster emails or Skype calls across the globe—to how we choose to relax- watching television or playing online video games. Even the developing world has found powerful uses and function for such technological innovation. Still, some technologies, regardless of usefulness or public availability, are accepted by a given community over other similar technologies. Middleton (2005) investigated the failure of U.S. health care information technology (HIT) to infiltrate the nation’s hospitals. Despite the evidence that HIT would significantly increase the quality of care patients receive, the technology remains rejected by the health care system. With such examples, researchers have extensively sought to explain how and why technology is adopted.

This literature review will explore the history of the Republic of Moldova as an exemplar case that illustrates the moderating effect remittances could have on the adoption of communication technology acceptance, particularly in respect to the transfer of health information. This review will also present the theoretical origin and background of technology acceptance. Finally, this section will introduce discursive literature on the effects of a remittance-based economy and knowledge transfer to citizens.

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Moldovan Background

Following the fall of the Soviet Union, Moldova was plunged into poverty and has persistently struggled to transform its economy and manage severe social crises. Remittances are now a key element of the lives of Moldovan emigrants. As the poorest nation in geographical Europe (World Bank, 2012), Moldova has sent approximately 600,000-1,000,000 citizens to work abroad (Hertlein & Vadean, 2006), though accurate migration rates are rarely available as many Moldovans illegally immigrate to find work (Ministry of Health and Social Protection, 2005). Nearly 1,500,000 Moldovans currently live in a household that receives some kind of remittances (United Nations Children Fund [UNICEF], 2008), and approximately 22% of all Moldovan households have at least one family member working abroad (Ministry of Health and Social Protection, 2005). In fact, the International Monetary Fund (IMF) found that in 2004 Moldova received more remittances as a proportion of the nation's GDP than any other nation in the world (International Monetary Fund [IMF], 2005).

Most migrants generally cite the need for work as the propellant for migration out of Moldova (Ministry of Health and Social Protection, 2005). Given Moldova's proximity to Europe, many Moldovan emigrants have greater accessibility to jobs in the more developed regions of Europe (generally, Italy, France, Russia and Great Britain). Only 3% of Moldovan immigrants move to North America, however those immigrants disproportionately remit 10% of the total monetary transmissions reaching Moldova (UNDP, 2009). According to data collected from the World Bank (2011), all Moldovans working abroad remit approximately \$1.6 (US) billion annually, or 23.2% of the nation's GDP. These remittances help keep family and friends of the immigrants in a somewhat stable standard of living.

Possibly, the migration process itself can be a detriment to the nation's health, since many emigrants, desperate to find work, are deceptively recruited into slavery or prostitution. The

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prevalence of human trafficking has resulted in a Moldovan population with increased physical, mental, and sexual health problems (Oram et al, 2012). Oram et al. (2012) investigated the symptoms of former trafficking victims and found that many had physical symptoms (i.e. headaches or stomach pain) as well as psychological trauma (i.e. post traumatic stress disorder or severe depression). Though the country's government has yet to fully comply with anti-trafficking regulations, these ailments both directly and indirectly affect the population.

Despite an increased expenditure on health services (Richardson et al., 2011), Moldovans are exposed to many deleterious health conditions that accompany a nation in poverty. Rural areas in particular are subject to many concerning circumstances. According to the most recent World Health Organization country profile for Moldova, the prevalence of tuberculosis is approximately 277 per 100,000 citizens (WHO, 2012). This rate is far above both the global and regional average. Detection and treatment of tuberculosis is also not at regional standards. Jenkins et al. (2013) studied tuberculosis rates in Moldova and found that the population is also more likely to fail at completing a full medication cycle, thus increasing rates of antibiotic resistant tuberculosis strains.

There are also other risk factors that Moldovans tend to suffer that are relatively well-contained throughout the rest of Europe and in other developed regions such as North America. For example, raised blood pressure continues to go untreated or ignored amongst some of the population (Strasser, 1998). Also, according to a recent study, the average Moldovan citizen consumes approximately three times more pure alcohol than the global average (18.22 liters to 6.1 liters) (WHO, 2011). This consumption rate leads to other defective health habits, like heightened liver cirrhosis rates, premature mortality, and increased domestic abuse.

To help ease the need for remittances, Moldova has become the target for many economy and governance building development programs. In 2012 the World Bank gave Moldova \$29.2 (US)

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million in operation money and another \$207.2 (US) million in loans. The organization has hosted over 10,000 projects in the country since 1947 and is a large source of information on the generally neglected country (World Bank, 2012). Organizations monitoring Moldova's development expect that with an improved economy, Moldovans will be more capable to move home and the reliance on remittances as a source of income will dissipate.

It is possible that due to the high emigration rate the nation fosters an extraordinary number of Internet connections. The Moldova Demographic and Health Survey [MDHS] (2005) found that only 7% of women and 3% of men migrated with their spouse or other family members. Thus there is a need to find a cheap and reliable way to contact family still in Moldova. Many Moldovan families turn to the Internet as an effective tool to connect with those abroad. Ownership of personal computers continues to grow and the nation had an Internet penetration rate of 16.2% in 2008, a figure that has since increased (OpenNet Initiative, 2010). Approximately 38% of Moldova uses the Internet regularly (World Bank, 2011). There is also an increase of publicly available Internet sources, from Internet cafes to local libraries (OpenNet Initiative, 2010). In fact, according to *The Atlantic Wire* (2011), Moldova placed as the nation with the eighth fastest download speed; the United States was ranked 30th (Rosenberg, 2011). The Moldovan government has also established the Ministry of Information Technology and Communications, which aims to provide Moldova with a modern digital society by the year 2020. The country maintains comparable Internet connection rates as its neighbors Romania, The Ukraine, and Bulgaria (OpenNet Initiative, 2010; World Bank a, 2011). This is especially impressive because Romania and Bulgaria are members of the European Union and all three nations have a significantly healthier economy than Moldova.

Both high remittances and access to communication technology are trends being found in the developing world. As such, exploring ways to exploit Moldova's communication technology access

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rates to increase public health awareness could provide insights about the future of other such nations as well. Identifying a way to use the Moldovan communication technology infrastructure as a conduit for public health knowledge from emigrants could help the 3.6 million Moldovans gain better health knowledge. It could also, following further study, help provide a model for the facilitation of knowledge that other developing nations could implement. Given the Moldovan economic and technological situation and the aim of this thesis, the following research questions are proposed:

RQ1: To what extent do Moldovans living in the United States and Canada use the Internet to search for health information?

RQ2: To what extent do Moldovans living in the United States and Canada use the Internet to contact family and friends in Moldova to transmit health knowledge?

Theory of Reasoned Action (TRA)

There has been extensive research into understanding the manipulation of voluntary behaviors. One such prominent predictive theory is the Theory of Reasoned Action (TRA). The model was intended to explain volitional human behavior (Ajzen & Fishbein, 1980). TRA excludes from its scope behaviors that might not be voluntary (i.e. spontaneous, habitual, or mindless behaviors) or that require special skills, unique resources, or assistance from others (Liska, 1984).

Importantly, TRA argues that behavioral intentions are a function of an individual's beliefs and attitudes about an object or situation and that those behavioral intentions are directly predictive of an individual's behavior (Fishbein & Ajzen, 1975). Behavioral intentions are considered to be the result of the combination of individual influence and a normative influence (subjective norm) (Fishbein & Ajzen, 1975; Madden, Ellen, & Ajzen, 1992). According to Fishbein and Ajzen (1975) an individual influence on intentions are the individual's attitudes toward the given behavior (e.g. "owning a home at some time in the future would be good"). Alternatively, the normative influence or subjective norm on

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behavioral intention is considered to be a person's belief that those significant to the individual feel that they should perform the specific behavior (e.g. "most people who are important to me think that I should own a home at some time in the future") (Hale, Householder, & Greene, 2002). The relative influence of either factor varies according to the situation, behavior, and individual differences (Ajzen & Fishbein, 1980; Vallerand et al., 1992).

TRA has been tested in several laboratory and field studies. The belief-intention-behavior correlation has been especially productive for scholars targeting persuasive messages (Yzer, 2010). By identifying and empirically validating the model, academics and practitioners can target messages at changing beliefs relevant to the object or situation, thus more effectively activating persuasion. In a meta-analysis, Sheppard, Hartwick, and Warshaw (1988) found that the model indeed is a predictor of behavioral intentions, and thus behavior.

Critics of the model have argued that TRA is incapable of generalizing to a broad enough range of human activities. There are many daily actions that an individual undertakes that are either not under the individual's control or a habitual behavior, but still in need of alteration. In such cases a persuasive campaign based in belief change would not be effective. For example, Yzer (2010) explained how a 2007 United Nations Educational, Scientific, and Cultural Organization (UNESCO) study found that the availability of condoms was the barrier to their use, not the community's belief they are effective. A campaign to spread awareness would have been ineffective, since condoms would have still been unavailable. As a result of the study, the Brazilian government installed condom vending machines in schools and trusted the public's previous knowledge on their usefulness.

Some scholars feel that TRA is not sufficient to explain a range of human behaviors and have suggested additional variables. Langridge, Sheeran, and Connolly (2007) separate those variables into three distinct categories: 1) Components of intention and the intention-behavior model; 2) Components

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of attitudes; and 3) Components of the subjective norm. The first set of additional variables, which regard intentions and behaviors, are discussed in the previous paragraph. The predictive capability is significantly hindered by the restriction to volitional behavior. Thus many have suggested perceived behavioral control and desire to complete the action as additional predictors to the model. Many extensions to the TRA model have also been suggested in regards to attitudes and their creation. Generally attitudes are deemed a combination of affective and cognitive reasoning. Trafimow and Sheeran (1998) found that participants have the ability to distinguish between affective (e.g. “owning a home would make me happy”) and cognitive (e.g. “owning a home would be worthwhile”) senses when forming behavioral intentions. Thus some scholars argue that both reactions should be included in TRA. Finally, it has also been argued that attitudes toward the result should be included in the model. For example, anticipated regret is a factor that individuals process while compiling attitudes toward the given behavior (Richard, van der Pligt, & de Vries, 1996).

Additional cognitive variables that alter the mechanism of TRA have also been suggested. Both moral norms and social relations are posited to influence an individual’s behavioral intention. Moral norms differ from the subjective norm in that they are independent of what the peer group deems appropriate, but rather what the individual feels they “ought” to do. Social relations are also considered additional to subjective norms, because the relations refer to the influence wielded by the prospect of creating new influence groups (Charng, Piliavin, & Callero, 1988).

Ajzen and Fishbein (1980) state that additional variables not specified by TRA are extraneous and provide no further general predictive capability than the simplified model. Langridge, Sheeran, and Connolly (2007) conducted a simultaneous test of the convergent, discriminant, and predictive validity of all the above additional variables. A survey of 897 romantic couples living in the United Kingdom on their intentions and attitudes towards having children found that constructs used to

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measure TRA provided the best fit for predicting behavioral intention. Additional constructs were shown to affect the individual's attitude or subjective norms toward the action and thus maintained the integrity of the original TRA model.

Technology Acceptance Model (TAM)

Founded on the attitude-intention-behavior model of the Theory of Reasoned Action, Davis (1989) developed a user acceptance information technology model. Many reasoned-action scholars have argued that to better understand given behaviors researchers must understand the intentions that motivate individuals rather than merely predict behavior (Ajzen & Fishbein, 1980; Davis, 1989). Davis (1989) posited that perceived usefulness and perceived ease-of-use are two fundamental influences on the adoption of technological innovations. Perceived usefulness was defined as the extent to which an individual believes that using the technology will increase their performance of a given task. While perceived ease of use was operationalized as the extent to which an individual believes that using the technology for a given task will be free of effort. Both moderators have been empirically proven to influence the rate of technology acceptance (Venkatesh & Davis, 2000). TAM also argues that perceived ease of use will influence perceived usefulness, as the easier something is to use the more helpful it will seem to the individual. Perhaps most importantly, Davis (1989) adapted the operationalized structure from TRA that posits individuals *intend* to act (Ajzen, 1988; Davis, 1989). The feedback from an attitude thus influences the individuals' behavior or adoption of technology.

TAM was originally developed to understand behaviors within industry; how workers accept and utilize new technologies on the job. Generally the model assumes that individuals decide to use or not use an application based upon how they perceive its helpfulness at their job. Adams, Nelson and Todd (1992) replicated Davis' (1989) primary investigation to test the generalizability of TAM to other contexts and technologies. The researchers distributed questionnaires that used Davis' (1989) original

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measures to 10 organizations, with 118 final respondents. The questionnaires assessed perceived ease of use and usefulness of both electronic mail and voice messages. Respondents were experienced in both technologies. Upon analysis, the study found that the measures were discriminately valid and reliable for varying technologies and non-industry settings, such as personal mail. TAM has since been tested through thousands of studies (Chen, Li, & Li, 2011; King & Li, 2006) and considered one of the field's most parsimonious models for understanding technology acceptance. TAM has been successfully implemented to understand a variety of topics ranging from online banking acceptance (Pikkarainen, Pikkarainen, Karjaluoto, & Pahlila, 2004) to media uses for health in the developing world (Park, Roman, Lee, & Chung, 2009).

Importantly, TAM specifically excludes the subjective norm component suggested by TRA (van Raaij & Schepers, 2008; Venkatesh, 2000; Venkatesh & Davis, 2000). Despite empirical studies regarding TRA, Davis et al. (1989) ultimately found uncertain support for the proposition that subjective norm influences the use or acceptance of new information systems (Davis, Bagozzi, & Warshaw, 1989). However, through a survey of 1,012 respondents, Teo and Pok (2003) found that the social influence wielded by peer groups and the implications on social identity have an impact on the adoption of WAP-enabled mobile phones. Researchers have found social variables to influence behavioral intention toward a technology (Teo & Pok, 2003; Venkatesh & Davis, 2000).

Though most studies have focused on acceptance in the work place, some research has investigated the link between social sources (i.e. family, neighbors, friends, or inspirational figures) as encouragement for accepting social innovations (Kulviwat, Bruner, & Al-Shuridah, 2009). In fact, Skog (2002) and Pedersen (2003) found that pressure from a peer-group or society spurred some consumers to adopt mobile phone technology. Rather than merely perceiving the technology to be

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useful or easy to use, individuals sought to increase their social identity through the consumption or use of a new technology.

Founded upon TRA, this model suggests that adoption of technology is motivated through intentional behavior, rather than coercion or peripheral processing. This fundamental condition to the predictive capabilities led researchers to seek a practical model. Described below and implemented in this study is the extended technology acceptance model (TAM2), which integrates the influences researchers have found and results in a more applicable model.

Extended Technology Acceptance Model (TAM2)

Individuals do not invariably maintain volitional control while accepting new information technology (Davis, 1993). The obligatory condition of purposeful action in TAM led Venkatesh and Davis (2000) to develop an altered model, entitled the extended technology acceptance model (TAM2). Significant progress has been made to understand all factors that influence technology adoption. The researchers included variables that manipulate both social influence process (subjective norm, voluntariness, and image) and cognitive instrumental processes (job relevance, output quality, result demonstrability, and perceived ease of use). (See Figure 1.)

Social influence process. As reviewed above, social influences have been found to impact attitudes toward technologies. Venkatesh and Davis (2000) in part developed the TAM2 to reflect such peer-influenced findings. The new model implemented the definition of subjective norm as defined by Fishbein and Ajzen (1975), which referred to the social pressure to perform a given behavior (Ajzen & Madden, 1986). The idea of the subjective norm, essentially when an individual partakes in a behavior due to pressure from a peer group, is a key element of the TAM2. The pressure of a peer or referent group could wield enough influence to encourage adoption of technology. While Davis (1989) found

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that the influence of subjective norm had no significant effect on behavioral intentions, he did acknowledge the need for further research into the mechanism further.

Another social factor indicated by TAM2 is the extent to which the individual feels the acceptance of the technology is voluntary. Hartwick and Barki (1994) posited that voluntariness is a crucial factor to the influence of subjective norms. They found that participants who felt their use of the technology was voluntary did not respond significantly to the influence of the perceptions' of others. However, those respondents who were mandated to use the technology were affected by the subjective norm. Thus, in TAM2 voluntariness is considered a moderating variable, which is defined as the extent to which a possible adopter perceives acceptance of the technology to be compulsory (Venkatesh & Davis, 2000; Kowalczyk, 2008).

Venkatesh and Davis (2000) also identified image as a social influence on perceived usefulness of a technology. Image can be a manipulator of perceived usefulness, as well as influenced by the subjective norm. If one perceives a technology to be in high esteem within their referent group, that individual is more likely to adopt the technology to raise their image within the group. The effect of image on behavioral intention is mediated by perceived usefulness.

Finally, the last social influence stipulated by TAM2 is the effect of experience with the given technology on subjective norm. Hartwick and Barki (1994) theorized that until an adopter has experience with the technology, their knowledge and beliefs about the system are ambiguous and indefinite. The researchers found that subjective norms influenced behavioral intention prior to using the system. However, after three months of system implementation the effect became nonsignificant. Agarwal and Prasad (1997) also found similar effects of experience and voluntariness on the subjective norm. The researchers posited that when mandated to use a system, participants initial system operation would increase. Forcing individuals to use a technology would help them overcome the

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difficulties associated with first-time use. Eventually, though, the original motivation subsides and individuals technology use wanes.

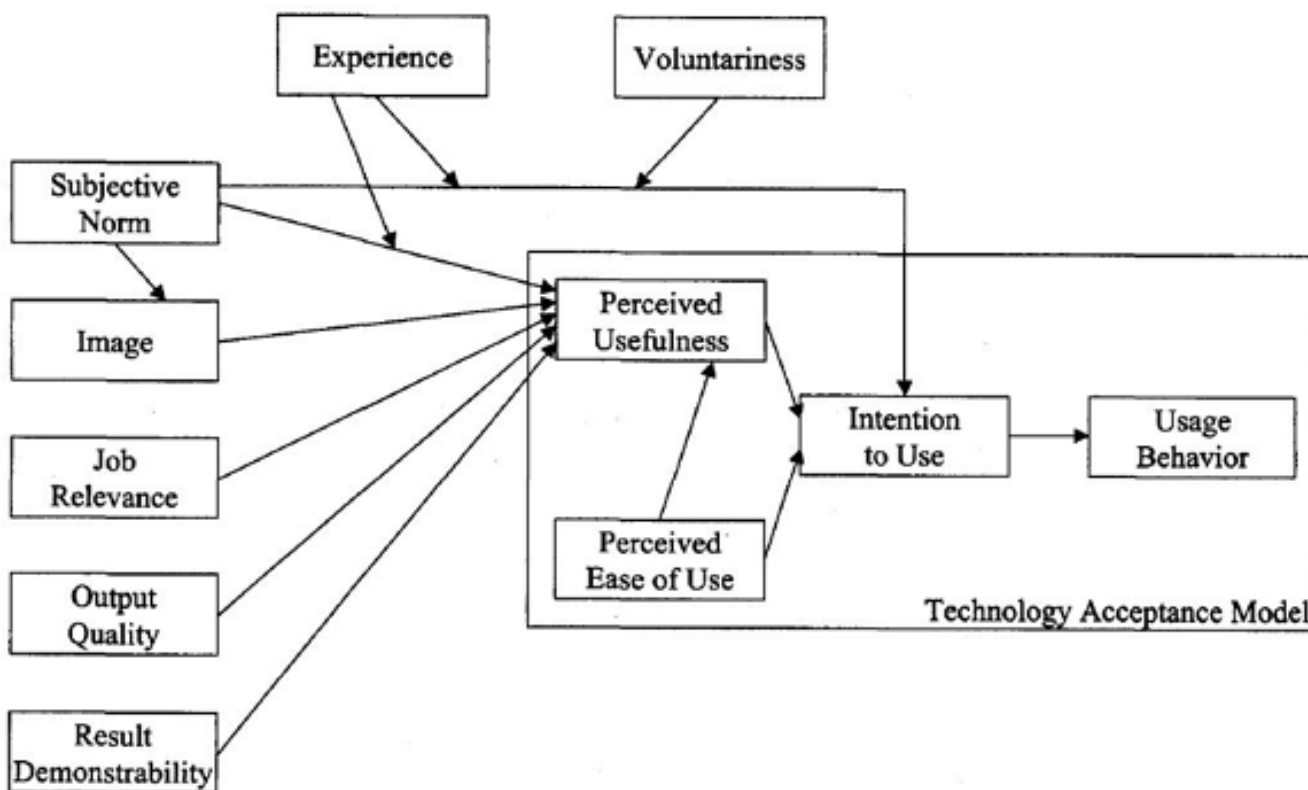


Figure 1. TAM2- Extension of the Technology Acceptance mode (Venkatesh and Davis, 2000).

Many other researchers have found empirical evidence for the inclusion of other variables into TAM and TAM2. There have been many studies aimed at discovering and explaining possible additional factors that influence the acceptance of technology. Venkatesh et al., (2003) stated, “it is clear that the extensions (moderators) to the various models identified in previous research mostly enhance the predictive validity of the various models beyond the original specifications” (p. 21). However, in a more generalized context, the supplementary variables are not considered viable for behavioral prediction because they have environmental boundary conditions.

Cognitive instrumental process. The extended technology acceptance model also includes four cognitive instrumental manipulators of perceived usefulness and perceived ease of use. These

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processes are the channels in which an individual compares what a technology can do with what that individual would like it to do. Ultimately, Venkatesh and Davis (2000) consulted the theories of work motivation (Vroom, 1964), action theory (Fishbein & Ajzen, 1975), and behavioral decision theory (Beach & Mitchell, 1978) to derive the appropriate variables that influence the model. They stated that behavior, in this acceptance of technology model, is induced by the relationship between a new system or device and the achievement of one's goals, and found that perceptions of perceived usefulness for the job correlate to technology acceptance.

However, these cognitive factors will not be addressed in this thesis, as the purpose of this investigation is to understand acceptance of technology for personal uses. The goal of this thesis is to understand how knowledge may be spread through information technology and personal relationships. Thus the vocation-related moderating relationships addressed by the TAM2 are not included in the conceptual models described in this thesis.

Predictive capability of TAM2. There have been many extensions and variations to models of the technology acceptance: TAM (Davis, 1989); TAM2 (Venkatesh & Davis, 2000); TAM3 (Venkatesh & Bala, 2008); and the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh, 2003). Each of these models addresses perceived faults in the previous theoretical development. However, for this thesis and its focus on the potential relationship of Moldovan remittance activity with attitudes toward knowledge remittances through the Internet, TAM2 is the most parsimonious and predictive model. The strength of TAM2 has been the model's applicability to a wide variety of situations. Though often focused on industrial technology acceptance, TAM and TAM2 have empirically proven predictive in many other contexts (Chrismar & Wiley-Patton, 2003). Such versatility originates from the simple structure of the two key moderating factors. Also, as explained above the, TAM2 was restructured with external social factors moderating the influence of

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technology acceptance. These factors combat claims of oversimplification and increasing the model's predictive capability (Fox, 2005).

The Concept of Knowledge Remittances

The idea of knowledge remittances is novel and has had few empirical studies. There are many definitions and measures of remittances, though most describe the transmission of capital. It is imperative to note that not all remittances are monetary. While monetary, or capital, transmissions back to the nation of origin are critical for an economic impact, they are not the only resource sent home by immigrants. Cohen (2005) stated, "We should not discount the importance of the goods that migrants send home, the knowledge that they bring, and the networks that they create. In other words, the concept of remittances as a wide array of resources that any migrant has to offer to his or her community of origin is critical" (p. 91). These goods and information often have little influence on the economic situation, but have the capacity to greatly improve the standard of living of the recipients.

This study will investigate the dual roles of remittances in the acceptance of Moldovan immigrants to use the Internet as a tool for health knowledge and dissemination. First, this research will explore the idea of "knowledge remittances." Knowledge remittances are any information, skills, or understanding sent from an immigrant abroad to citizens living in the nation of origin. This study is particularly interested in the transmission of health knowledge from an immigrant in the United States or Canada to family and friends living in Moldova.

When forming developmental plans, cultural factors and remittances are often overlooked, which has attenuated the success of potential aid projects (Rao & Woolcock, 2007). In fact, migrants living abroad transmit many systems to their family and friends at home. The process of migration is a reciprocal cultural model since it connects and influences both societies involved (Portes, 1996). As the transmission of culture has been found successful from immigrants living abroad back to their

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family, this study will argue that knowledge, particularly on issues of health, can also be transmitted back to denizens in the country of origin.

Applying TAM2 to Remittance Based Economies: Knowledge Remittances

The importance of capital remittances to some developing economies hints at a potential influential role of capital remittances in predicting the acceptance of knowledge remittances through the Internet. Private remittances between family and friends have become an influential part of the global financial landscape (Grabel, 2010). In fact, the World Bank (2011) found that worldwide remittances reached an estimated \$440 billion (US), nearly twice the amount of governmental development assistance for developing nations. For many developing nations remittances represent more support than international or governmental aid. However, data about remittances is only available for formal channels of transmission (Lucas, 2005).

Though it has been shown that remittances can positively influence the lives of recipients, economists have also found negative effects for both the individuals and society. According to Levitt and Lamba-Nieves (2011), in addition to helping the receivers, remittances could also foster economic dependency and inequality, create unrealistic expectations of possible standards of living, and intensify competition between groups within the society. Still, economists presume citizen remittances to be an aid in national development (Ratha, 2003). In fact, in 2004 remittances were deemed so important to the growth in the developing world that leaders of the *Group of Eight* (G8) nations pledged to reduce the cost of money transfers and to promote policies that foster easier remittance transmissions (Orozco, 2004). At the macroeconomic level, remittances provide capital-poor nations with a source of foreign exchange that allows the government to provide a hard currency. Alternatively, at the microeconomic level, remittances help citizens survive difficult times and fund basic necessities (Menjivar, DaVanzo,

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Greenwell, & Valdez, 1998). The help to the individual and family also relieves governmental pressure from providing societal aid.

This study will also analyze remittances as a moderating factor to the extended technology acceptance model (TAM2). Research has found that remittances affect those that receive the transmission (Menjivar et al., 1998). Based on the findings of Menjivar et al. (1998), this study will also consider the idea that remittances can alter the complete acceptance of the Internet as based on TAM2. Menjivar et al. (1998) conducted a field survey of Filipino and Salvadoran immigrants living in Los Angeles. Though not labeled as such, the researchers found that various social factors and subjective norm effected the immigrants' decision to remit money. Most importantly, family income and family location were consistent factors that influenced remittance. Based on these findings, this study hypothesizes that relationship between capital remittances and intention send knowledge remittances to the country of origin will be mediated by perceived usefulness of knowledge remittances.

This thesis focuses on novel dynamics of applying of the model to a remittance-based economy. Often, previous research has found that perceived usefulness influences the intention to adopt a given technology, subjective norms have also been found to influence adoption of the technology. Therefore, it is predicted, that in the case of attitudes toward knowledge remittance, existing remittance behavior serves as a unique predictor in a TAM2-based model while other variables predicted by the TAM2 remain similar in their relationships and function. (See Figure 2.)

H1: For Moldovans living in The United States or Canada, the remittance of money will correlate to the perceived usefulness of sending knowledge remittances back to Moldova.

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H2: For Moldovans living in The United States or Canada, the perceived usefulness of sending knowledge remittances back to Moldova will correlate with the intention to send knowledge remittances to Moldova.

H3: For Moldovans living in The United States or Canada, the subjective norms of sending knowledge remittances will correlate to the perceived usefulness of sending knowledge remittances.

H4: For Moldovans living in The United States or Canada, attitude towards sending capital remittance will positively correlate with the perceived usefulness of sending knowledge remittances.

RQ4: If given health information, will Moldovans living in the United States and Canada transmit that information through the Internet to family or friends still living in Moldova?

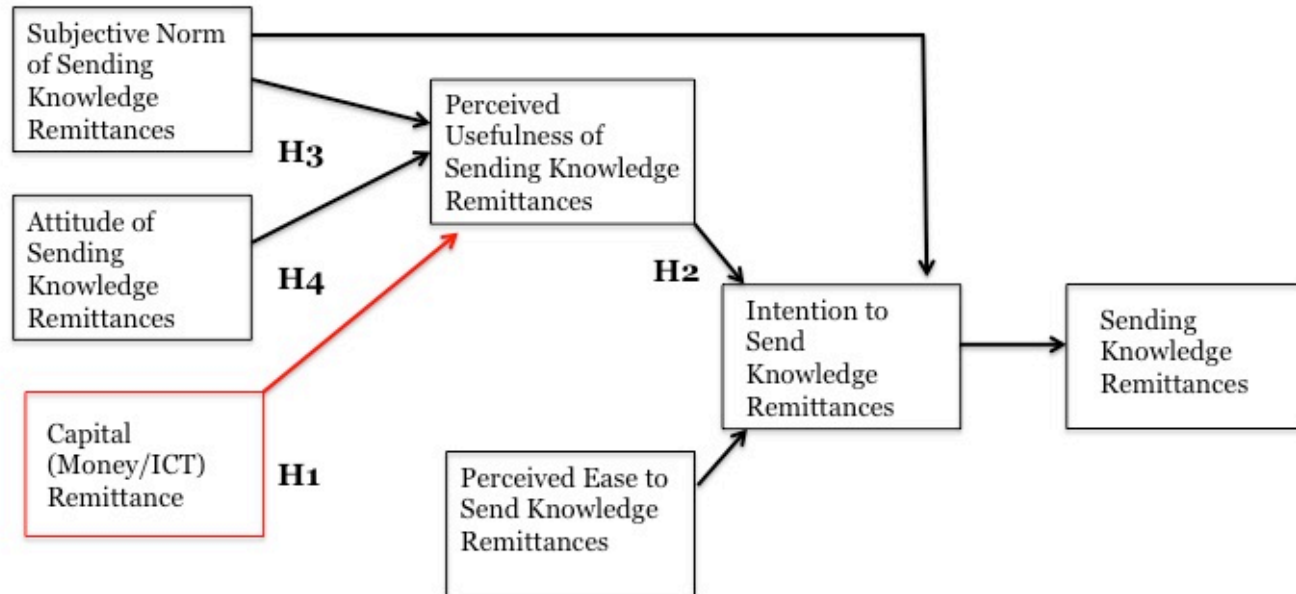


Figure 2. TAM Model (TAM2) with Capital Remittance Moderators.

Study 1

The aim of Study 1 was to better understand the role of remittances and the role that such monetary, knowledge, and technological transmissions represent in predicting comprehensive acceptance of the idea of sending health information to denizens at home. To investigate this, Moldovan immigrants living in the United States and Canada were recruited to participate in an online survey.

Population and Sample

Respondents were self-identified Moldovan immigrants living or working in The United States of America or Canada ($n = 15$). Current and exact population records are difficult to attain for Moldovans living and working abroad in The United States and Canada, making identification of a sampling frame difficult. Generally, though, both nations have relatively similar societal norms, economic status, and immigration policies and were thus expected to provide similar environments for Moldovan immigrants.

Potential respondents were contacted through accessing various online community groups. Despite receiving 1,427 page views in six months, 28 respondents completed the survey. See Appendix A for a full list of recruitment sources. Six respondents were removed from the data set because they did not consider themselves Moldovan and seven respondents were removed from the data set because they were not living in The United States or Canada.

Questionnaire Instrument

Items adapted from previous research dealing with the TAM2 model, which was considered appropriate because of its broad and well-validated research base (Kowalczyk, 2008), were used to investigate the study's hypotheses and research questions, along with some novel measures of remittance activity, demographics, and other relevant variables. The complete survey instrument can

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be found in Appendix B. A TAM2-based questionnaire (Venkatesh & Davis, 2000) was adapted and tailored to be more specific to the situation of Moldovan remittance. For example, appropriate language modifications were made to fit the situation and clarify the intent of the questions for Moldovan immigrants in The United States and Canada. The constructs of “Job Relevance”, “Output Quality”, and “Result Demonstrability” were excluded from the previous instrument as they are intended to measure acceptance towards industry technology, not interpersonal justifications.

All TAM2 constructs were measured using seven-point Likert-type scales, with anchors at “strongly disagree” and “strongly agree”. The instrument also assessed demographic information (i.e. Moldovan citizenship, current residence, income, occupation). Participants also responded to open answer questions regarding their previous remittance behavior, Internet habits, and presumed behavior of their family in Moldova. Finally, participants read a short public announcement on tuberculosis and responded to questions regarding their intended behavior towards potential knowledge transmission. The items are included in the Appendix B.

The survey questionnaire was first created in English and then translated into Romanian, the national language of Moldova, by a native speaker from either language. The language used in the questionnaires was typical of Moldovan citizens; though many Moldovans also speak Russian, only two languages were deemed necessary to provide adequate accessibility to Moldovans in the United States and Canada considering the high rate of potential respondents fluent in Romanian, English, or both languages.

Reliability

The reliability of a measurement instrument is the degree that the same data would have been collected each time in repeated observations of the given phenomenon (Babbie, 2010, p. G9).

Reliability of survey indices was conducted to ensure stability across units of measurement. Indices

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with a Cronbach's alpha score of 0.60 and higher were considered at least moderately reliable and included in data analysis. Cronbach's alpha reliability coefficients (see Table 5) were acceptable for the constructs of Perceived Usefulness (Cronbach's $\alpha = .912$), Perceived Ease of Use (Cronbach's $\alpha = .904$), Behavioral Intention (Cronbach's $\alpha = .929$), Subjective Norm (Cronbach's $\alpha = .923$), Image (Cronbach's $\alpha = .892$), and Attitude (Cronbach's $\alpha = .622$).

Data collection

An online survey was considered appropriate for data collection because of the considerable literature that supports its use in intention-based studies (Chan et al., 2010; Venkatesh, Thong, & Xu, 2012). An online survey was also necessary to gain access to as many participants as possible. Despite its formidable per capita global emigration rate, the Moldovan population is small and dispersed across the two countries. Also, as stated previously, many Moldovan immigrants have access to the Internet already, primarily as a means to contact family and friends still in Moldova.

The questionnaire was uploaded in both Romanian and English to a host website: www.thedragosproject.org. The website described the researcher and a brief statement of purpose for the project as well hosting the survey. Participants were made aware of the study's general purpose. All participants gained access to the survey through this website. See Appendix C for further description of the website and its audience scope. Consent was given at the beginning of the questionnaire by an affirmative response. Once respondents completed the questionnaire they were thanked for their time and debriefed. Survey results were downloaded in a spreadsheet for data analysis.

Participants were contacted through various outlets. All major Moldovan-immigrant organizations in The United States and Canada were contacted. A total of 593 individual recruitment solicitations were sent (See Appendix A for complete list of survey recruitment avenues). The survey

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response rate was 4.722%. The response rate was a generalization because the exact reach of recruitment materials is unknown.

Results

Due to the low number of survey responses, analyses of a multivariate model could not be conducted. Bivariate correlations and independent t-tests were used to examine relationships between individual pairs of model constructs.

Analysis of descriptive variables. See Table 1 for descriptive summaries of survey responses. Of the initial group of 28 survey respondents, 78.571% ($n = 22$) considered themselves Moldovan. Respondents that listed a nationality other than Moldovan ($n = 6$) were removed from the sample. Of the initial group of survey respondents, 53.571% ($n = 15$) reported currently living in The United States, 14.285% of respondents ($n = 4$) reported currently living in Canada, and 32.143% of respondents ($n = 9$) reported currently living outside either nation. Those participants not currently residing in either The United States or Canada were removed from the study ($n = 13$).

Of the respondents included in analyses ($n = 15$), 6.667% of the survey respondents were between the ages of 18-25 ($n = 1$), 40.000% of respondents were between the ages of 26-30 ($n = 6$), 40.000% of respondents were between the ages of 31-40 ($n = 6$), and 13.333% of the survey respondents were between the ages of 41-60 ($n = 2$).

Of respondents included in analyses, 46.667% ($n = 7$) had lived in The United States or Canada for less than five years, 20.000% of respondents ($n = 3$) had lived in The United States or Canada between 6-10 years, 33.333% of respondents ($n = 5$) had lived in The United States or Canada for longer than a decade. No participants had lived in The United States or Canada for longer than 17 years.

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The most prevalent occupation of survey respondents in the final sample was student (26.667%, $n = 4$). Another 13.333% of respondents ($n = 2$) reported working for an aid or non-governmental organization. Other respondents reported working as an accountant (6.667%, $n = 1$), insurance agent (6.667%, $n = 1$), banking representative (6.667%, $n = 1$), pharmaceutical representative (6.667%, $n = 1$), scientist (6.667%, $n = 1$), self-employed (6.667%, $n = 1$), or stay at home mom (6.667%, $n = 1$). Finally, 13.333% of respondents ($n = 2$) did not report their occupation.

Table 1. Frequencies and Percentages for Nationality Variables ($n = 28$)

Variable	Frequency	Percentage
Citizenship		
Moldovan	21	77.778
Other	6	22.223
Residence		
USA	15	53.571
Canada	4	14.285
Other	9	32.143

Table 2. Frequencies and Percentages for Demographic Variables ($n = 15$)

Variable	Frequency	Percentage
Age in years		
18 to 25	1	6.667
26 to 30	6	40.000
31 to 40	6	40.000
41 to 50	2	13.333
51+	0	0
Years spent abroad		
Less than 5 years	7	46.667
6-10 years	3	20.000
10+ years	5	33.333
Occupation		
Student	4	26.667
NGO/Aid Organization	2	13.333
Accountant	1	6.667
Insurance Agent	1	6.667
Banking Representative	1	6.667
Pharmaceutical Representative	1	6.667
Scientist	1	6.667

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Self-employed	1	6.667
Stay at home mother	1	6.667
N/A	2	13.333

Analysis of previous Internet behavior and habits. The first research question inquired into respondents' Internet habits. All participants (100.000%, $n = 15$) reported using the Internet and using the Internet multiple times a day. Specifically, 100.000% ($n = 15$) of respondents used the Internet to connect with family or friends, 93.333% ($n = 14$) of respondents used the Internet to read the news, 73.333% ($n = 11$) of respondents used the Internet for entertainment, 100% ($n = 15$) of respondents used the Internet for work, 93.333% percent ($n = 14$) of respondents used the Internet to find health information, 80% ($n = 12$) of respondents used the Internet to find information about Moldova, 66.667% ($n = 10$) of respondents used the Internet to socialize on online forums, and 13.333% ($n = 2$) of respondents used the Internet for other purposes.

Table 3. Frequencies and Percentages for Internet Usage Variables ($n = 15$)

Variable	Frequency	Percentage
Use of the Internet		
Yes	15	100
No	0	0
Frequency of Use		
Multiple times a day	15	100
Daily	0	0
Multiple times a week	0	0
Weekly	0	0
Multiple times a month	0	0
Monthly	0	0
Multiple times a year	0	0
Yearly	0	0
Never	0	0
Other	0	0
Reason for Internet Use		
Connect with friends/family	15	100
Read News	14	93.333
Entertainment	11	73.333

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For work	15	100
Find health information	14	93.333
Find information about home	12	80.000
Socialize with online forums	10	66.667
Other	2	13.333

Analysis of previous health knowledge transfer. The second research question investigated respondents' previous transfer of health information. Of participants, 93.333 % (n = 14) reported searching online for general health information, 53.333% (n = 8) reported searching for information on a specific health ailment, 46.667% of participants (n = 7) reported searching for information for another person, 40.000% of participants (n = 6) reported searching for information about a given medicine or vitamins, 20.000% of participants (n = 3) reported accessing health information to communication with a medical professional, 100.000% of participants (n = 15) reported seeking health information on an online forum, and 100.000% of participants (n = 15) reported seeking health information for another reason.

Table 4. Frequencies and Percentage of Health Information Seeking (n =15)

Variable	Frequency	Percentage
Reason for seeking health information		
General information	14	93.333
For a specific ailment	8	53.333
For another person	7	46.667
For information about a given medicine or vitamin	6	40.000
To communicate with a medical professional	3	20.000
To participant in an online forum	15	100
Other	15	100

Remittance predictive of perceived usefulness of sending knowledge remittances. H1 that remittances would correlate to the perceived usefulness of sending knowledge remittances back to Moldova. A t-test was conducted to compare previous monetary remittance to Moldova and perceived usefulness of sending knowledge remittances to Moldova. There was a significant effect for monetary

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remittance on the perceived usefulness of sending knowledge remittances, $t(13) = 3.702$, $p < .003$. H1 was supported.

Table 5. Reliability for TAM2 Constructs

Item	Mean	SD	
BI1	5.533	1.06	
BI2	5.400	1.056	
BI3	5.533	1.407	
BI4	5.667	1.046	
BI5	5.600	.828	
Total	5.547	1.079	
Cronbach's $\alpha = .929$			The original TAM2 (Venkatesh & Davis, 2000) found a Cronbach's α for this construct = .82-.97 across studies and time periods
PU1	5.867	.833	
PU2	6.133	.640	
PU3	5.733	.884	
PU4	5.733	.884	
Total	5.867	.800	
Cronbach $\alpha = .912$			The original TAM2 (Venkatesh & Davis, 2000) found a Cronbach's α for this construct = .87-.98 across studies and time periods
PE1	5.667	.816	
PE2	5.667	1.29	
PE3	6.133	.639	
PE4	5.933	.703	
PE5	6.000	.654	The original TAM2 (Venkatesh & Davis, 2000) found a Cronbach's α for this construct = .86-.98 across studies and time periods
Cronbach $\alpha = .904$			
SN1	4.200	1.656	
SN2	4.333	1.447	
Total	4.267	1.552	
Cronbach $\alpha = .923$			The original TAM2 (Venkatesh & Davis, 2000) found a Cronbach's α for this

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			construct = .81-.94 across studies and time periods
I1	3.6	1.764	
I2	4.333	1.397	
I3	3.600	1.723	
Total	3.844	1.628	
Cronbach α = .892			The original TAM2 (Venkatesh & Davis, 2000) found a Cronbach's α for this construct = .80-.93 across studies and time periods
A1	5.667	.900	
A2	5.993	.704	
A3	5.067	1.534	
A4	5.533	1.302	
Total	5.565	.709	
Cronbach α = .622			The original TAM2 (Venkatesh & Davis, 2000) Cronbach's α is unavailable.

Table 6. Frequencies and Percentages for Remittance Variables (*n* = 15)

Variable	Frequency	Percentage
Sends money home		
Yes	5	33.333
No	10	66.667
Amount sent in dollars		
\$0	7	46.667
\$1-\$200	2	13.333
\$201-\$1,000	1	6.667
\$1,001-\$5,000	2	13.333
\$5,001-\$7,000	2	13.333
\$7,001+	1	6.667
Sends packages home		
Yes	12	80.000
No	3	20.000
Number of packages sent home		
1	3	20.000
2-5	9	60.000
6-10	1	6.667
Unknown	2	13.333

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Types of technology sent to Moldova

Cell phone	4	26.667
Computer	9	60.000
Phone Card	0	0.000
Music Player	1	6.667
Television	0	0.000
DVD Player	0	0.000
Camera	5	33.333
Other	2	13.333

Months took to remit to Moldova

1	0	0.000
2-4	0	0.000
5-7	1	6.667
8-10	2	13.333
11-13	3	20.000
12-24	1	6.667
24+	1	6.667
None/unavailable	7	46.667

Reason for remittance

To help family	5	33.333
To increase family's income	2	13.333
Feeling guilty	0	0.000
To help pay for their child	0	0.000
Help pay for family's children	0	0.000
Help build my house	0	0.000
Responsibility	2	13.333
Do not send money home	6	40.000
Other	5	33.333

Frequency of contact with family in MD

Multiple times a day	1	6.667
Daily	3	20.000
Multiple times a week	6	40.000
Weekly	2	13.333
Multiple times a month	3	20.000
Monthly	0	0.000
Multiple times a year	0	0.000
Yearly	0	0.000
Never	0	0.000
Other	0	0.000

Method of contact

Telephone	7	46.667
Email	10	66.667

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Skype	15	100.000
Social media	7	46.667
Ground mail	2	13.333
In person	6	40.000
Other	0	0.000

Correlation of perceived usefulness on the intention to send knowledge. H2 predicted that the perceived usefulness of sending knowledge remittances back to Moldova would positively correlate to the intention to send knowledge remittances back to Moldova. The correlation between perceptions of the remittance of health knowledge as useful and the intention to remit health knowledge in the future was not significant, $r(15) = .424, p < .116$. H2 was not supported.

Correlation of subjective norms to the perceived usefulness to send knowledge. H3 predicted that for Moldovans living in the United States or Canada, the subjective norm of sending knowledge remittances would positively correlate to the perceived usefulness of sending knowledge remittances. The correlation between subjective norm and perceived usefulness was only marginally significant, $r(15) = .498, p < .060$. H3 was not fully supported.

Correlation of attitude to perceived usefulness knowledge remittances. H4 predicted that for Moldovans living in The United States or Canada, their attitude towards sending knowledge remittances would positively correlate to the perceived usefulness of sending knowledge remittances. The correlation between attitude and perceived usefulness was significant, $r(15) = .704, p < .003$. H4 was supported.

Exemplification of health knowledge remittance. RQ3 investigated a practical application of the remittance-based TAM2 model. If given health information, will Moldovans living in the United States and Canada transmit that information through the Internet to family or friends still living in Moldova? More than half (53.333%, $n = 8$) of responses would not remit the information home to family in Moldova, 6.667% of respondents would send the information home ($n = 1$), and a little less

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than half (40.000%, n = 6) were unsure of whether or not to remit the tuberculosis information.

However, more than half of the respondents have already discussed tuberculosis with relatives living in Moldova. 6.667% of respondents (n =1) often discuss tuberculosis with relatives in Moldova, 26.667% of respondents (n = 4) have discussed tuberculosis with relatives in Moldova a couple times, 20.000% of respondents (n = 3) have spoken once with relatives in Moldova about tuberculosis, and 46.667% (n = 7) have never discussed tuberculosis with relatives in Moldova. No participants (n = 0) had discussed health information with relatives either often or a couple times. However, 80.000% of respondents (n = 12) had discussed health information at least once with relatives still in Moldova and 20.000% (n = 3) had never discussed health information.

Summary. Study 1 was an online survey of Moldovans currently living in the United States and Canada. Respondents were recruited through direct acquaintance emails, social media, online forums, local clubs, and direct mail. Ultimately, the survey received 28 respondents, 15 of which were applicable for analysis. Due to the small end size, only correlation analyses could be conducted for pairs of variables in the proposed conceptual model rather than analyses of the entire model based on principles of Structural Equation Modeling (SEM).

Results suggest that Moldovans living in the United States and Canada indeed have access to the Internet and use the technology on a regular basis, particularly to contact family still in Moldova. The respondents, however, were unlikely to transmit the knowledge provided on Tuberculosis, though many have already discussed Tuberculosis and other health issues with their family.

In summary, the analyses seem to suggest a relationship between remittance activity and perceived usefulness of a knowledge remittance strategy (H1) and a relationship between attitudes toward a knowledge remittance strategy and perceived usefulness of a knowledge remittance strategy (H4). There was less evidence that for a relationship between perceived usefulness of a knowledge

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remittance strategy and intention to send knowledge remittances (H2) and a relationship between the subjective norm of sending knowledge remittances and intention to send knowledge remittances (H3). (See Figure 3.) While tentative, these results suggest that the TAM2 may be a relevant framework for understanding how remittance activity may predict perceptions of a knowledge remittance strategy and that existing capital remittance in a remittance-based economy is a key predictor of attitudes toward knowledge remittance.

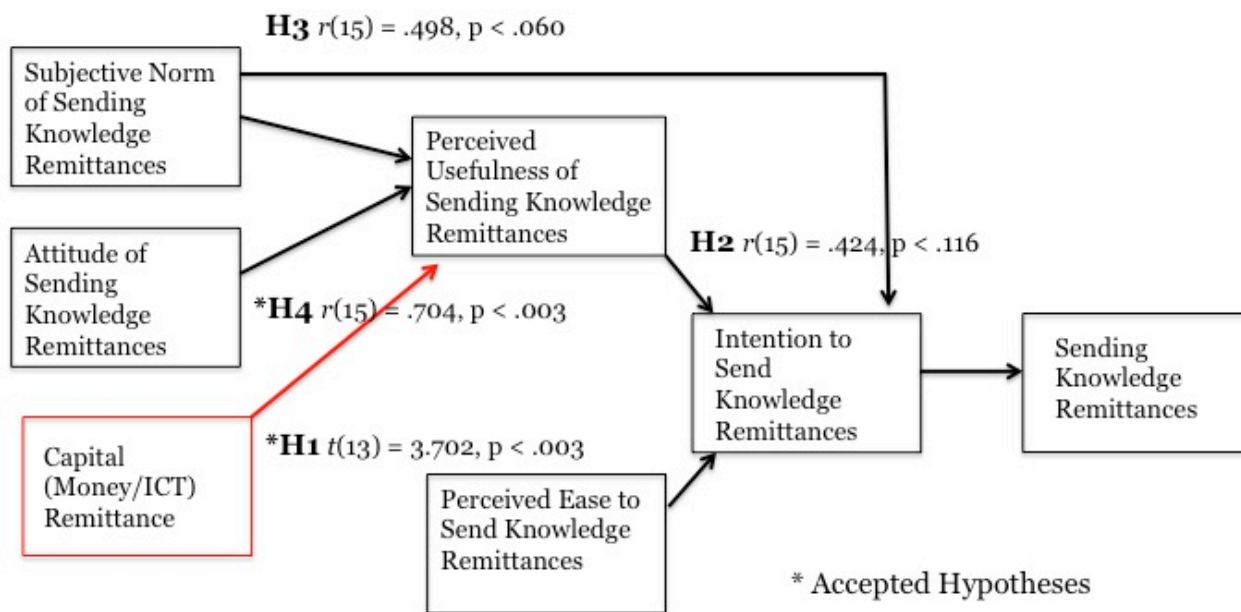


Figure 3. TAM Model (TAM2) with Capital Remittance Moderators Accepted Hypotheses

Discussion

Study 1 was an examination of the possible influence capital remittances transmitted from Moldovans living and working in The United States and Canada could wield on the acceptance and intention to send health knowledge back to family. Previous research has established that remittances indeed affect those that receive the transmission (Menjivar et al., 1998). However, very few studies have yet to investigate the transmission of knowledge through traditional remittance structures. Due to Moldova's high remittance and Internet penetration rates amongst the population, it is an ideal case to

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further develop a theoretical model for the acceptance of knowledge remittances. Even with a minimal response rate, this study provides an exploratory foundation for understanding the possible role immigrants working abroad could play in the implementation of a health campaign.

The results of this study suggest that perceptions of knowledge remittances and attitude towards sending knowledge remittances are significantly correlated to the perceived usefulness of sending knowledge remittances. Though somewhat correlated, there was a weak significance level for the correlation between the perceived usefulness of sending knowledge remittances and the intention to send knowledge remittances and the correlation between subjective norms associated with sending knowledge remittances and the perceived usefulness of sending knowledge remittances. However, perhaps with more end responses the significance level would indicate the model's predictive capability. The non-significant correlation between perceived usefulness of sending knowledge remittances online and the intention to follow through with the behavior should be further investigated. As stated in the literature, many studies have suggested the link between the two constructs. Further research is necessary to investigate the current findings.

Study 1 also found that Moldovans living in The United States and Canada have access to and use the Internet on a regular basis. In fact, online media seem to be the primary mode of contact for family still in Moldova. While the survey respondents were unlikely or unsure of their intention to forward along a health message about tuberculosis to family in Moldova, many respondents have already discussed the specific illness or other health risks with their family.

The primary interest of this study was the introduction of capital remittance as an influencer to the acceptance of knowledge transmission to family members living in Moldova from a Moldovan immigrant living abroad. This study found that generally those Moldovans that have remitted capital were more likely to indicate that sending knowledge remittances is a useful way to transmit health

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knowledge. It is then possible that once Moldovan immigrants living abroad have aggregated enough resources to begin remitting capital, they may also have acculturated to the new society.

Increased perceptions of usefulness of knowledge remittances could assist aid organizations target and new and more accessible modes of spreading a health knowledge campaigns. Currently many aid organizations run health campaigns throughout Moldova. Some organizations have taken advantage of the high Internet penetration rate and initiated online health campaigns (i.e. <http://www.gripa.md/>). These campaigns have reported varying amounts of success. Perhaps, those aid organizations with limited resources could target Moldovans who have begun remitting back to family and friends in Moldova. The necessary resources for such a campaign are reduced, as all preparation and distribution happens domestically.

Remitters could also provide a cultural link between the aid organization and the intended population. Again, the survey found that those Moldovans who already find remittances helpful and have a positive attitude towards capital remittances are likely to perceive knowledge remittance useful. Perhaps remitters who live abroad and accept the information spread in a health campaign are more credible to the actual intended audience in need of the health knowledge. While there was a correlation between the perceived usefulness of knowledge remittances and the respondents' intention to remit health knowledge, the significance level cannot confirm the model's predictability. Still, the correlation levels agree with previous TAM2 studies that confirmed the constructs (intention towards the behavior and subjective norms) validity and predictability.

Finally, the study also inquired into the realistic transmission of health knowledge through an application test. Generally, the Moldovan respondents were either unlikely or unsure of their intention to remit the knowledge provided in a United Nations information release on Tuberculosis. Though these responses seem to counter the previous findings, many of the respondents have already discussed

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Tuberculosis with family and all respondents have discussed at least one health issue with their family prior to taking the survey. As an established health risk in Moldova, it is possible that the survey respondents felt that their family already had access to the given information. The attitudes towards health risks in Moldova were further investigated in Study 2.

Study 2

To further investigate and elaborate on the results of Study 1, interviews were conducted with five Moldovan citizens. The interviews conducted in this study explored the topics of remittances, technology use, receptiveness to a remittance-based knowledge campaign, and the health needs of Moldova with Moldovan informants. Respondents of this study anecdotally enumerated the existence of the Moldovan-Internet phenomenon and provided a narrative for the quantitative results of Study 1.

Method

Informants: Qualifications and recruitment. In order to develop rich descriptions of Moldovan remittance behavior and information technology acceptance, all informants for this study were self-identified Moldovan citizens. Five Moldovan informants provided individual interviews with one researcher. The informants' background varied by location, gender, occupation, and economic background. Informants were recruited through a snowball sample of the researcher's acquaintances. See Table 7 for informant descriptions.

Table 7. Informant demographic information ($n = 5$)

Informant ID	Gender	Occupation	Current Residence	Years in US
Ion	male	Truck driver	Wyoming, USA	3 years
Luca	male	Banker	Chisinau, Moldova	N/A
Olga	female	Director of International non-profit for immigrants in USA	Pennsylvania, USA	20+ years
Tania	female	Director of	North Carolina, USA	17 years

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		Moldovan non-profit organization		
Svetlana	female	Student- currently seeking work in international development	District of Columbia, USA	2 years

*All informant identifications have been changed for confidentiality

Data collection: Procedures and materials. This study consisted of in-depth qualitative interviews. After providing consent, each informant participated in a recorded discussion prompted by a series of questions. Interview questions were based on the study hypotheses and research questions and organized to optimize detailed descriptions of the Moldovan phenomenon. All questions were designed to develop constructs and concepts that could be adapted to the TAM2 model and questionnaire constructs.

The questions inquired about the subject's previous remittance behavior, Internet usage and attitudes, perceived attitudes and behaviors of family and friends still living in Moldova, and beliefs regarding the most challenging health issues facing Moldova. Informants were offered the opportunity to conduct the interview in either English or Romanian. All interviews were conducted in English. See Appendix D for full interview questions. All interviews followed the following protocol, with the exception of one informant who currently resides in Moldova (see Table 8 for alterations and explanations):

Table 8. Interview questions and rationale

Question:	Rationale:
<ol style="list-style-type: none"> 1. <i>Have you ever sent money home?</i> <ol style="list-style-type: none"> a. <i>What amount?</i> b. <i>What is the reason for sending money home?</i> c. <i>Who did you sent money?</i> 	The purpose of these questions is to acquire background information about the informants' use of traditional remittance systems and to start the informants contemplating the role of remittances in their relationships with those family or friends still in Moldova.
<ol style="list-style-type: none"> 2. <i>Have you sent anything else than money home?</i> 	The purpose of these questions is to explore nontraditional forms of remittance.

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- a. *If so, what was it?*
 - b. *Why did you send that/those particular item(s)?*
 - c. *How do you think that your family in Moldova used these items?*
 3. *How do you feel about sending money/items home to Moldova?* The purpose of this question is to explore the perceived impact of remittances for the recipients.
 4. *How long did it take you to start sending money/items back to Moldova?* The purpose of this question is to lead the informant to recall their remittance experience.
 5. *Do you feel pressured to send money/items back to Moldova?* The purpose of this question is to explore the associations between the informant and their family or friends still in Moldova.
 6. *Do you feel pressured to send money/items back to Moldova?* The purpose of this question is to explore the associations between the informant and their family or friends still in Moldova.
 7. *Do you use the Internet here?*
 - a. *What for?*
 - b. *How often?*
 - c. *How do you have access to the Internet?*The purpose of these questions was to lead the informant to describe their current Internet usage.
 8. *Do you use the Internet to seek information?*
 - a. *What kinds of information do you look for online?*
 - b. *Do you typically trust the information you find online?*
 - c. *Do you ever tell your family or friends about the information you have learned on the Internet?*
 - d. *What influences your decision to pass along information?*The purpose of these questions is to explore how the informant seeks for information and possible influences on the perception of that information.
 9. *Do your family and friends use the Internet?*
 - a. *Who do you think taught them?*
 - b. *Do you think they like it?*
 - c. *What do they use it for?*
 - d. *How do they have access to the Internet?*The purpose of these questions is to further explore typical information technology usage in Moldova.
 10. *What do you consider major health problems in Moldova?* The purpose of these questions is to describe how the current health situation in Moldova is
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- a. *Since living in The United States/Canada have you learned ways to prevent or protect against those health problems?*
 - b. *If Yes: What were they?*
 - c. *If Yes: Have you told your family and friends still living in Moldova?*
 - d. *If No: Why have you not sought that information?*
 - e. *If No: What would promote you to search for that type of information?*
-

Interviews were conducted either by phone or in-person and lasted between eleven minutes and twenty-nine seconds and thirty-seven minutes and thirteen seconds. All interviews were conducted in English.

The interviews were recorded and then analyzed. As reaction themes were discovered, the researcher compared each theme to the previous interviews. Themes were sorted and grouped to illustrate patterns in remittance behavior and technology acceptance. Following completion of the questions, informants were thanked for their time.

Results

The interviews uncovered many themes regarding Moldovan-immigrant remittance behavior, technology adoption, and past health behavior. The results suggest the following three themes are important to the Moldovan phenomenon being analyzed in this study: 1) Wide use of information technology, particularly the Internet, use in Moldova, 2) Remittance as a productive application of resources, 3) Indecision amongst citizens on Moldova's major health needs.

Wide utilization of information technology. Every informant in the interviews regularly used the Internet. The reasons for Internet use varied greatly, but had some similarities across interviewees. Most informants stated they use the Internet as a cheap and effective way to contact family and friends still abroad. However, most informants also use the Internet as part of their daily life in The United

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States. As a former graduate student, Svetlana learned to use the Internet every day for her studies. Ion currently works as a truck driver in the Western United States and is on the Internet not only to contact his wife in Wyoming, but also to keep up to date with shipments. Throughout her interview, Tania, who runs a non-profit aid organization targeting Moldovans, spoke of the Internet as a tool for connecting her with possible project partners or funding organizations.

Consistent with the survey responses from Study 1, all informants use the Internet to contact family and friends still living in Moldova. They also generally use the Internet to socialize with family or friends who have gone abroad elsewhere. Olga supposed that social media was used as the main method to contact family still in Moldova, “a similar software as Facebook, it’s called Однокласники [Odnoklassniki]”. I guess that is a primary source of communication.”

The informants also discussed how family and friends still living in Moldova utilize the Internet. While the frequency with which Moldovans still in country is less than expatriate counterparts, according to the interviews there is still widespread Internet usage. Tania has younger nephews who use the Internet regularly for studies in college and Svetlana’s mother uses the Internet daily for work. Both families, however, live in the capital city. Ion’s family lives in a village south of the capital and his family has no need to access the Internet daily. Instead, they use the Internet to contact Ion and his siblings who are currently working abroad. Luca, the only informant currently residing in Moldova, uses the Internet frequently. He also runs an online blog dedicated to informing English-speaking visitors about Moldova. He has online access from many different devices. Only Olga’s family still in Moldova lack direct, at home, access to the Internet. However, her family is still able to get online through local Internet cafes.

Remittance as a productive use of resources. The informants were all in agreement that remittance of money and goods was a productive use of resources and all seemed encouraging of a

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remittance-based knowledge campaign for family in Moldova. Each of the informants, except Svetlana and Luca, have sent home money. Ion, who arrived in The United States three years ago, has been able to send approximately \$2,000 home to Moldova. He has also sent many packages. Olga has sent money to former neighbors who take care of family land and to cousins living in Chisinau.

Tania believes that her remittance of money was vital to her family's survival. She left Moldova with her husband in 1993, around the time of the fall of the Soviet Union. That time was especially difficult for Moldovans. "Our parents would not have survived without the money," Tania stated. She continues to send money back to many family members and no longer keeps track of the amount. Svetlana believes that usually the remittance goes to provide education for a child left behind. She also cited a Moldovan friend living in the United States who sends monthly remittances to maintain the "general cost of living".

Olga has not sent back any technology, but her family members with stronger ties have sent home more goods. She believes that returning Moldovans often travel home with a computer. "It's common when people go and visit and you need to bring in a gift. I think a technology item is much more comfortable than anything else, and much more needed. I think it's much more common for people to take technology items." Ion and Svetlana had similar beliefs on the remittance of technology.

Svetlana has visited family once since immigrating to The United States; on her trip she brought a computer so her mother could have access to Skype at home. Tania regularly brings back technology items for her family. "If my nephews work hard in the summer and want an ipad, yes, I bring an ipad for them." She believes that the technology is not used to just to simplify the lives of her family, but rather has an educational purpose. Her nephews use the laptops to contact friends online, but to also finish their studies.

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Tania also distinguished between the remittance goals of migrants and sojourners. According to the informant, many Moldovans still plan on returning to The United States and save money to build a secure and more affluent life upon their return to Moldova. However, those Moldovans that have made permanent homes abroad send remittance to family and friends to better the lives of the recipients. The money ceases to be an investment in the migrants' own future and are often more altruistic. Both Svetlana and Ion have married American citizens and also don't expect to return to life in Moldova. Their remittance behaviors are in accordance with Tania's ideas. Together they have sent home items that make life improvements (i.e. a computer or cell phone) rather than further a status symbol.

Finally, most informants stressed the ease of returning home with the technology or money. Bringing goods and money home when visiting is much more efficient for immigrants to remit. According to Svetlana, "it's really expensive to send money home...the charges for Western Union takes like a ridiculous amount of money. Like, 20% or 25% from your amount. So, if you send a small amount it's not worth it." She believes this is the case for Moldovans who recently arrived abroad and only have minimal amounts of money to give.

Indecision of Moldova's major health issues. Finally, even amongst such few informants, there was no consensus as to the major health risks facing Moldova. When asked, each informant had a different response to the most detrimental health threat to those citizens still living in Moldova. Most informants cited a specific disease as an issue. Only Luca listed a lack of availability to resources as a health risk. See Table 9 for results.

However, often the underlying rationale for the proposed risk was similar. Informants often believed that either Moldovan's nutrition habits or mindsets had a large effect on the nation's overall health. All informants, except Luca, mentioned the poor Moldovan eating habits. Often, informants inferred that Moldovans continue to eat unhealthily because they are unaware of the effects a poor diet

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can cause. Both Ion and Tania gave personal examples of a family member who was diagnosed with a disease and put on an improved diet plan to reduce the issue (i.e. reduced alcohol intake to help high blood-pressure). However, the family member of both informants disregarded the doctor's recommendations. According to the informants, there is a distrust or willful ignorance of healthy eating habits amongst Moldovans.

Many informants also discussed the outdated mindset still held by many Moldovans, particularly of the older generation. Tania recalled her mother not permitting her to discuss "death" as a child. Just mentioning "death" was considered bad luck and a superstitious precursor to illness in the house. Svetlana believes that those outdated health beliefs and superstitions also keep many Moldovans away from actual preventive care measures. Her belief that cancer is the gravest health risk facing Moldovans stems from the belief that with regular checks and easy preventable measures (i.e. wearing sunscreen) cancer rates could drop regularly. Instead, she says, Moldovans ignore the situation.

Table 9. Perceptions of greatest health risk by Moldovan informants (*n* = 5)

Informant:	Health Risk:	Rationale:
Ion	Proper Nutrition-Carbohydrates	People are not eating healthy and it's leading to more serious illnesses
Olga	Organ Trade	Poverty has driven citizens to "any information related to health to wellbeing will be greatly appreciated over there"
Svetlana	Cancer	The mindset towards preventive care in Moldova is non-existent.
Tania	Strokes	Eating healthy
Luca	The health care system	Once sick, Moldovans have no good options

Tania's considers that her biggest influence on her family has been influencing their health habits. At age 63 Tania's mother had a stroke and she had to relearn how to do many basic tasks. "I

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think that if I would have been in Moldova and if this had happened, she would have been dead.”

Now, Tania’s mother walks around the track ten times a day and watches her diet.

Discussion

The aim of this study was to further describe the role of remittances from migrant Moldovans living and working in The United States and Canada and information technology habits of those immigrants. Based on the five interviews conducted with Moldovans a few major themes emerged that could have potential implications for health interventions and knowledge spread in the country. According to the informants, the Internet is a widespread and accessible information tool for Moldovan citizens, remittances in many various forms are considered a beneficial use of resources, and there seems to be no consensus on important health issues facing Moldova. However, the underlying issues of proper nutrition and decision to partake in preventive care did have support amongst the informants.

Access to information technology. Despite the OpenNet Initiative (2010) statistics cited earlier, the informants believed that the Internet was widely available to family and friends still living in Moldova. In fact, the leading method of communication with their own family and friends was through Internet-based platforms (i.e. Facebook or Skype). Most informants reported that their family used the Internet for tasks other than contacting those members abroad, such as for work or accessing information.

It seems that the younger generation of Moldovans is vital to the spread of access and education on the Internet. Svetlana’s brother who still works in Chisinau, “has Internet at work and that’s how he learned it. And then because I’m here [The United States] they got a connection to be able to talk to me by Skype.” Her brother was the first family member still in Moldova to learn to completely adopt the Internet, however Svetlana’s immigration facilitated the spread of the technology to the rest of the family. For Ion, his family first purchased Internet for his home when his older brother left for

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England. Many Moldovans see the economic value of adopting the Internet for communication purposes. However, according to the interviews many Moldovans cease their Internet education there.

At least with the older generation, a comprehensive understanding of the Internet's possibilities never manifests. Despite the Internet availability throughout the country, few informants had confidence in their families' ability to seek out new and trustworthy health information. With the exception of Svetlana, whose mother works in the health industry, each of the informants felt unsure about their relatives' desire to find information on health. Particularly in regards to the older generation, Moldovans trust the superstition-based health knowledge they have grown up with.

According to the interview informants, it may be that the younger generation of Moldovans may also be more likely to accept and utilize the Internet for prosocial reasons. Luca began and maintains a blog dedicated to informing an English language audience about Moldova. The initiative was entirely his own undertaking and not part of a job. Furthering the reputation of Moldova is Luca's prerogative, however there are of course many other Moldovans possible to apply the same skills to other types of campaigns, such as health or political.

However, it is possible that there is a bias inherent to the informants questioned. Those Moldovans that have the possibility to immigrate outside of Moldova may also come from more affluent backgrounds, and thus already have increased access to resources.

Perceptions of remittance. The informants were overwhelmingly in favor of remittances as a tool for economic and social development. Once settled abroad, all informants that had the capability sent money and goods home to family in Moldova. Items ranged from computers (Svetlana and Tania) to sports paraphernalia (Ion). As a recipient, Luca greatly relied on remittances from an American friend. He felt that receiving American goods, at the very least, was inspiring- something to work hard for, so he could one day buy the items himself. Tania, who has lived a considerable time abroad,

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believes that her remittances were vital to her family's survival following the collapse of the Soviet Union. Most informants agreed that their remittances were being used to improve the standard of living for recipients in a significant way. Only Olga felt that occasionally her family would use the remitted money or goods for trivial items.

Important to this study, is the idea that knowledge learned abroad should also be sent home by Moldovan immigrants. Each informant, including Luca, has previously discussed health information with his or her family in Moldova. Given the information is valid, any spread of health knowledge is beneficial for society. However, the perceptions of serious health risks facing Moldova seemed to vary greatly amongst the interviewed sample. The discrepancy amongst informants of what information is important enough pass along to family in Moldova may reduce effects of domestic-based health campaigns.

The immigrant must first place value on the information before the transmission of knowledge to their family. Immigrants are inundated with new health information, from bathroom signs to wash your hands to toothpaste commercials. However, much of this information does not seem either relevant or important enough to remit.

Once the immigrant has decided to remit knowledge, there are many factors that could influence the information's reception. Particularly, the informants felt that length of time removed from Moldova may influence the acceptance of the health information by family or friends. Tania believes the effectiveness of her knowledge remittances has weakened as she acculturated to the United States. "I don't have that much credibility... they always tell me, 'This is not true' because it's not what they want to hear... They trust people who have only been in the US for a few weeks." Ion feels that despite his expected extended in the United States he would always influence his immediate family.

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Implications for health campaigns. As discussed above, many of the informants believed that their relatives would rather rely on the superstition-based health knowledge they used as a child. Even once the information is adopted, there are still significant amounts of social stigma attached to accepting the new health information. Tania recounted an experience she had recently while visiting family in a northern village. A family member with high blood pressure decided to eat healthy and reduce his intake of alcohol. When Tania asked why he was not invited to the party her family immediately dismissed him. She said, “they thought of him as so *blaah*, he doesn’t want to come to our parties because he eats healthy.” His acceptance of a new lifestyle excluded him from societal events. This poses a large challenge for aid organizations, even if the knowledge recipient accepts the information they must also accept the societal consequences that accompany the break with tradition.

General Discussion

Remittances remain a tool for economic, cultural, and informational growth and development. Many individuals in developing nations around the world rely on such remittances for the mere continuation of an acceptable standard of living. In particular, the Moldovan citizenry is dependent on remittances from immigrants who have moved abroad for work. However, there has been limited investigation into the influence such remittances wield on the complete acceptance of the Internet as a tool for spreading health knowledge. Both studies have investigated the relationship that capital remittance can wield on the decisions for Moldovan immigrants living and working in the United States and Canada to send knowledge remittance home.

Study 1 was a quantitative survey of Moldovan immigrants currently living in the United States and Canada. Study 2 further elaborated the results found through qualitative interviews with five Moldovans. Together the studies found that Moldovans that to remit capital or to have a positive attitude towards capital remittances are more likely to perceive sending knowledge back to Moldova as

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a useful utilization of resources. The influence of capital remittance and subjective norms on the intention to remit knowledge, however, found no supporting evidence. The studies also found that Moldovan immigrants living in the United States and Canada have already begun discussing health issues with family still in Moldova, but there is little agreement as to which health risks should receive attention.

The studies support the first and fourth hypotheses, that previous capital remittance or a positive attitude towards capital remittances will correlate to a perceived usefulness of knowledge remittances. This of course has many implications for aid organizations attempting to further health knowledge in Moldova. A domestic-based health campaign could be more time and cost efficient. Also, the knowledge being dispersed from family members could lead to more credibility within the intended population. As many of the informants discussed, they have already had a direct effect on the health habits of their immediate family. This effect does seem to weaken as the immigrants spend more time abroad and are perceived by those family members still in Moldova as outsiders. However, many Moldovans work abroad with the intention of returning and thus maintain their cultural credibility.

The implications for a domestic or Internet based health campaign are also supported by the study responses that Moldovans in the United States and Canada have access to the Internet and use it on a frequent basis. However, campaigns must then still find a way to persuade Moldovan immigrants that the health information given is valuable enough to transmit home to Moldova. Because both interview informants and survey respondents stated the primary path of communication with family in Moldova was the Internet, the cost of transmitting information is relatively low. The accepted value of the information, however, is a barrier to transmission.

The studies conducted also have implications for the theoretical evolution of the extended technology acceptance model (TAM2). While there have been many TAM and TAM2 studies that

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have investigated the adoption of new technologies in developing regions, few have studied specifically the moderating effects of a remittance-based society (Chin, Marcolin, & Newsted, 2003). Immigration and the reliance on remittances are an increasingly common economic phenomenon and this area of research will become increasingly vital to understand. The empirical results of the survey questionnaire have supported the assumption that remittances have a moderating influence on the acceptance and transmission of knowledge. The results of these studies suggest that those immigrants that remit may be receptive to remittance-based knowledge campaign.

These studies have also explored the types of remittances sent home to family and friends in Moldova. While immigrants living in the United States and Canada do send money home, they are also very likely to send goods to Moldova. Many of the participants sent back a computer or technology item to family, which means that much of Moldova has access to new technology. This access could also be initially beneficial to aid workers seeking an online knowledge campaign.

The findings of Study 1 are also notable for their implications on applying TAM2 to technology inspired social acceptances. Scholarly work utilizing TAM2 has generally focused directly on the acceptance of a given technology (i.e. employees using e-mail in the workplace). This study found strong correlations between the TAM2 constructs for the acceptance knowledge remittance that was utilized through a specific technology- the Internet. In this study, the Internet played a role in the economy of sending knowledge remittances. The availability of a cheap communication source makes it possible for Moldovan immigrants to remit easier and quicker than other traditional forms of international communication. While the Moldovans surveyed found sending knowledge remittances through the Internet useful, they also had to accept the idea of sending knowledge remittances. The acceptance of such a social constructs have rarely been empirically tested with TAM2. However, the

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strong correlation rates have shown that knowledge remittances follow the patterns to acceptance as technology tests. This assumption must of course be tested with a larger sample in the future.

Limitations

There are several limitations of this study that should be acknowledged. First, the sample size renders complete analysis of the data impossible. Though there were strong correlations, with a larger number or survey respondents clearer delineations in the data would be possible. The results of this study are based on 15 Moldovan online survey respondents and cannot be generalized to the Moldovan immigrant population.

There was also a possible sampling bias, as the survey was conducted entirely through the Internet. It is possible that socio-economic barriers have influenced the results the study. Only Moldovan immigrants living the United States and Canada that also have access to the Internet could respond. It is also possible that those Moldovans that use the Internet are also preferential to contacting family through the technology. Those Moldovans living in the United States and Canada that choose to contact family in Moldova through more traditional communication structures may also not invest in the Internet for themselves.

Also, some limitations originate in the survey language. The original Venkatesh & Davis (2000) survey questions were adapted for an audience naïve to survey language. However, it is possible that some language, either in English or Romanian, was still difficult for survey respondents to understand. This may be one explanation for the weak reliability for the attitude construct. There were also many survey respondents who did not consider themselves Moldovan. The survey did a poor job distinguishing between Moldovan origination and alignment with Moldova culturally. As Tania noted, despite being born and raised in Moldova, she now considers herself American.

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Finally, while the qualitative nature of the interviews helped describe further the phenomenon of remittance and Internet acceptance by Moldovan immigrants living in the United States and Canada, the attempts to generalize their responses to the population may be overly simplistic. The informant interviews merely provide background and context for the survey responses.

Future Research

Despite these basic limitations, this study provides a foundation for future study into the role of capital remittances on the decision to also remit knowledge. Of course a study with increased Moldovan participation could yield more significant results. Also, generally fewer Moldovans immigrate to Northern America (UNDP, 2009) than the geographically closer European countries; perhaps a study of immigrants in those locations would develop a richer and more generalizable understanding of the phenomenon.

Of course, though, a field study of the adapted TAM2 model would be an ideal arena to study the applicability of remittance based knowledge transfer. As Olga stated in her interview, “any health knowledge would be helpful”. An applicable health campaign executed to Moldovan immigrants currently living in the United States and Canada, if disseminated by a researcher, could be a very effective contingency study based on this foundation. The test of such a campaign would of course lead to the ultimate understand that knowledge remittances could play in influencing Moldovan health attitudes.

Once a comprehensive view of the Moldovan knowledge remittance has been constructed, further developing nations should also be tested. As a small nation, Moldova has only a limited amount of global influence. However, it can serve as a model for other remittance-based economies. Nations such as Haiti, Mali, or the Philippines have all reported similar per capita remittance rates as

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Moldova. If a knowledge campaign proves successful in Moldova, these nations may also benefit from the predictive model.

In my experience depicted at the beginning of this thesis, only Rodica was interested in the search for valid and reliable health information. However, based on the results of these two studies, Moldovans have the capability and resources to improve the nation's devastating health challenges. With help from those Moldovans who work and live abroad, perhaps the country will emerge from its current status as the poorest and unhealthiest in Europe to show the globe the caring, loving, and beautiful nation that I experienced during my two years abroad.

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Appendix A: Study 1 Recruitment

Table 10. Recruitment Modes and Frequencies:

Organization:	Mode:	Number of individual Contacts:	Date:	
Facebook	Online	438	3/14/13-4/2/13	
Twitter	Online	23	3/15/13-4/10/13	
Expatriate Online Forums	Online	7	2/10/2013-3/17/2013	
Moldovan Blogs	Online	6	2/10/2013	
Casa Mare- Non-profit	Online	1	2/10/2013	
	In-person			
	Direct mail			
Asociatia Moldova Pentru Democratie si Dezvoltare- Non-profit	Online	1	2/10/2013	*Forwarded to listserve
	Direct mail			
MoldovaAID- Non-profit	Online	1	2/17/2013	
International House- Non-Profit	Online	1	2/17/2013	
Moldova-Italy Association- Non-Profit	Online	1	3/6/2013	
Moldova-USA Association	Online	1	3/17/2013	
Toronto-Moldovan Association	Online	1	2/10/2013	*Forwarded to listserve
	Direct mail			
Comunitatea Moldovenilor din Quebec	Online	1	4/1/2013	*Forwarded to listserve
Communaute Moldova	Online	1	2/10/2013	
Russian Orthodox Church: Virginia	Online	10	2/10/2013	
	Direct mail			
Russian Orthodox Church: New York	Online	20	2/10/2013	
	Direct mail			
Radio Diaspora Online	Online	1	3/14/2013	
Individual Academic e-mails	Online	14	2/10/2013-3/14/2013	
North Carolina-Moldova Association (UNC)	Online	3	3/14/2013	
	Direct mail			
Society for Romanian	Online	3	3/14/2013	*Placed in

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Studies				April Newsletter *Posted story about Dragos Project
Romanian-USA Newspaper	Online	1	3/15/2013	
Linked-In	Online	5	2/10/2013	
University International Student Association	Online	26	3/16/2013	
YouTube	Online	1	3/17/2013	
Google+ Moldovan Communities	Online	3	3/17/2013	
Peace Corps Moldova	Online	20	3/17/2013	
Moldova Restaurant Brooklyn	Direct mail	1	4/1/2013	
Moldovan Restaurant Toronto	Direct mail In person	2	12/18/2013-4/1/2013	
Total Contacts = 593				

**Some overlap between Social Media sites and Moldovan associations*

Appendix B: Study 1 Survey Instrument

TAM2 Based Questionnaire

Behavioral Intention [6]

- Assuming that I have access to the Internet, I intend to use it to find information on healthy living and tell my family about the tips I find.
- I intend to use the Internet to find information on healthy living, and tell my family in Moldova about the information I have found.
- Once I have access, I intend to use the Internet to find information on healthy living and tell my family about the tips I have found online.
- I DO NOT intend to use the Internet to find information on healthy living, and to tell my family in Moldova about those tips.
- Whenever possible, I intend NOT to use the Internet find information online.
- To the extent possible, I would use the Internet to find new information on healthy living and tell my family in Moldova.

Perceived Usefulness [4]

- The Internet is an effective tool to find health information that I can tell my family in Moldova about.
- Using the Internet is a quicker way to find health information that I can tell my family about.
- Using the Internet to find new health information that I can tell my family about is a productive way to spread information.
- Using the Internet to find new health information that I can tell my family about cannot enhance the information's effectiveness.

Perceived Ease of Use [5]

- Using the Internet to find health information to tell my family about is clear and understandable
 - Using the Internet to find health information to tell my family in Moldova about does not require a lot of my mental effort
 - I find using the Internet to find health information to tell my family about is an easy.
-

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-
- It is not easy for me to use the Internet to find health information that I can tell my family about.
 - I find using the Internet to be an inflexible way to find health information that I can tell my family about.
-

Subjective Norm [2]

- People who influence my behavior think that I should use the Internet to find health information that I can tell my family about
 - People who are important to me think that I should use the Internet to find health information that I can tell my family in Moldova about.
-

Voluntariness [1]

- My use of the Internet to find health information about which I can tell my family in Moldova is voluntary.
-

Image [3]

- People in my town who use the Internet to find new health information that they can tell their family about have more prestige than those who do not.
 - People in my town who use the Internet to find new health information that they can tell their family in Moldova about have a high profile.
 - Using the Internet to find new health information that I can tell my family in Moldova about is a status symbol in my town.
-

Attitude [4]

- Using the Internet to find health information that I can tell my family in Moldova about is a good idea
 - The Internet to find health information that I can tell my family in Moldova about is a beneficial tool
 - I like the idea of using the Internet to find health information that I can tell my family in Moldova about.
 - Using the Internet to find health information that I can tell my family about would be unpleasant.
-

Remittance [8]

- I send money home to my family in Moldova
-

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- How much money have you sent to your family and friends in Moldova?
 - Have you ever sent home a package?
 - What have you sent home?
 - Have you ever sent home technology?
 - What have you sent home?
 - When did you begin sending packages home to Moldova?
 - Do you tell your family about health information you have learned since living in the US/Canada?
-

Demographic [5]

- I am Moldovan
 - I live in The United States
-
- I live in Canada
 - How old are you?
 - Why did you come to the United States/Canada?
-

Remittance Behavior [9]

- I have sent money home to family in Moldova
 - I have sent money home to friends in Moldova
 - How much money total have you sent home to Moldova?
 - How much money per month have you sent?
 - Have you ever sent home a package?
 - What was in the package?
 - Have you ever sent home a computer?
 - Have you ever sent home a telephone/cell phone?
 - Why did you send home money or goods?
-

Internet Use [3]

- I use the Internet
 - How frequently do you use the Internet?
 - What do you use the Internet for?
-

Health Campaign/Information Seeking [5]

- Please check all that describe why you looked for health information on the Internet in the past
-

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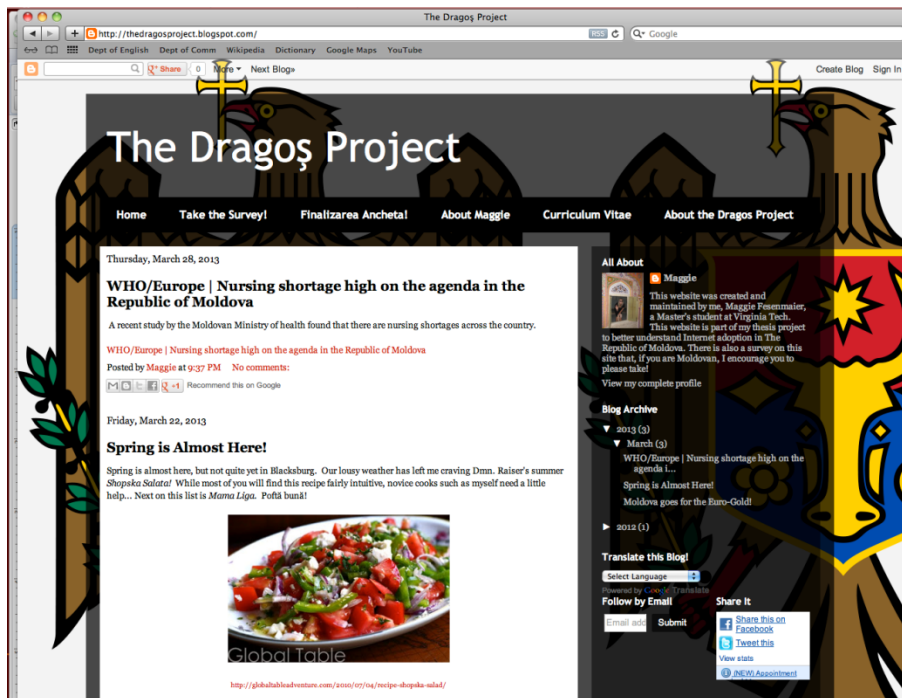
- General Information
- For a specific condition
- For someone else
- Information on medicines or vitamins
- Communicate with physicians or physician's office
- Participate in an online support group
- Other _____

[Following the TB health blurb]

- Do you believe the above information about Tuberculosis?
 - Are you planning on telling your family living in Moldova about this new information?
 - Have you already discussed Tuberculosis with your family living in Moldova?
 - Do you regularly tell you family about new health information you encounter online?
-

Appendix C: Dragos Project Website

Front page:



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English Survey:

The screenshot shows a web browser displaying the English survey page. The page title is "The Dragoș Project" and the main heading is "The Dragoș Project Survey". The page is framed by a decorative border featuring a dragon's head and a cross. The navigation menu includes "Home", "Take the Survey!", "Finalizarea Ancheta!", "About Maggie", "Curriculum Vitae", and "About the Dragoș Project". The main content area contains the following text:

Take the Survey!

The Dragoș Project Survey

Investigators: Margaret A. Fesenmaier; Dr. James Ivory

The purpose of this study is to measure attitudes toward a foreign population while it experiences an uprising. There is minimal risk involved in this study. Some benefits from research participation may include increased insight on social science research goals and procedures, as well as a conceptual understanding of issues presented by the media. The data provided by you will remain anonymous. You will not put identifying information on the questionnaire to protect your privacy. Your participation in this study is on a volunteer basis. If, at any time, you want to withdraw from the study, you may do so.

I voluntarily agree to participate in this study. I have read the above Consent Statement and conditions of this project. I have had all my questions answered. Submission of the survey will acknowledge the above and give my voluntary consent.

Should I have any pertinent questions about this research or its conduct, and research subjects' rights, and whom to contact in the event of a research-related injury to the subject, I may contact:

Investigator: Margaret Fesenmaier email: m.fes@vt.edu
Faculty Advisor: Dr. James Ivory email: jivory@vt.edu
Departmental Reviewer: Dr. John Tedesco email: tedesco@vt.edu

* Required

The right sidebar contains an "All About" section with a profile picture of Maggie, a "Blog Archive" section with links for 2013 (3) and 2012 (1), a "Translate this Blog!" section with a language selector, and a "Follow by Email" section with an email input field and a "Submit" button. There are also social media sharing options for Facebook, Twitter, and a link to the AEWI Appointment.

Romanian Survey:

The screenshot shows a web browser displaying the Romanian survey page. The page title is "The Dragoș Project" and the main heading is "Proiectul Dragoș Ancheta". The page is framed by a decorative border featuring a dragon's head and a cross. The navigation menu includes "Home", "Take the Survey!", "Finalizarea Ancheta!", "About Maggie", "Curriculum Vitae", and "About the Dragoș Project". The main content area contains the following text:

Finalizarea Ancheta!

Proiectul Dragoș Ancheta

Virginia Polytechnic Institute and State University

Consimțământul în Cunoștință de Causă pentru Participanți
la Proiecte de Cercetare care Implică Subiecți Umani

Anchetatorii: Margaret A. Fesenmaier; Dr. James Ivory

Scopul acestui studiu este de a măsura atitudinea față de o populație străină în timp ce experimentează o revoltă. Există un risc minim implicat în acest studiu. Unele beneficii ale participării la cercetare pot include o perspectivă a crescut pe obiective sociale de cercetare științifică și a procedurilor, precum și o înțelegere conceptuală a problemelor prezentate de mass-media. Datele furnizate de tine vor rămâne anonime. Tu nu va pune informațiile de identificare pe chestionarul pentru a vă proteja intimitatea. Participarea dumneavoastră la acest studiu este pe bază de voluntariat. În cazul în care, în orice moment, pe care doriți să se retragă din studiu, puteți face acest lucru.

Am voluntar de acord să particip la acest studiu. Am citit declarația de aprobare de mai sus și condițiile acestui proiect. Am avut toate întrebările mele raspuns. Recunosc prin prezenta de mai sus și da acordul meu voluntar:

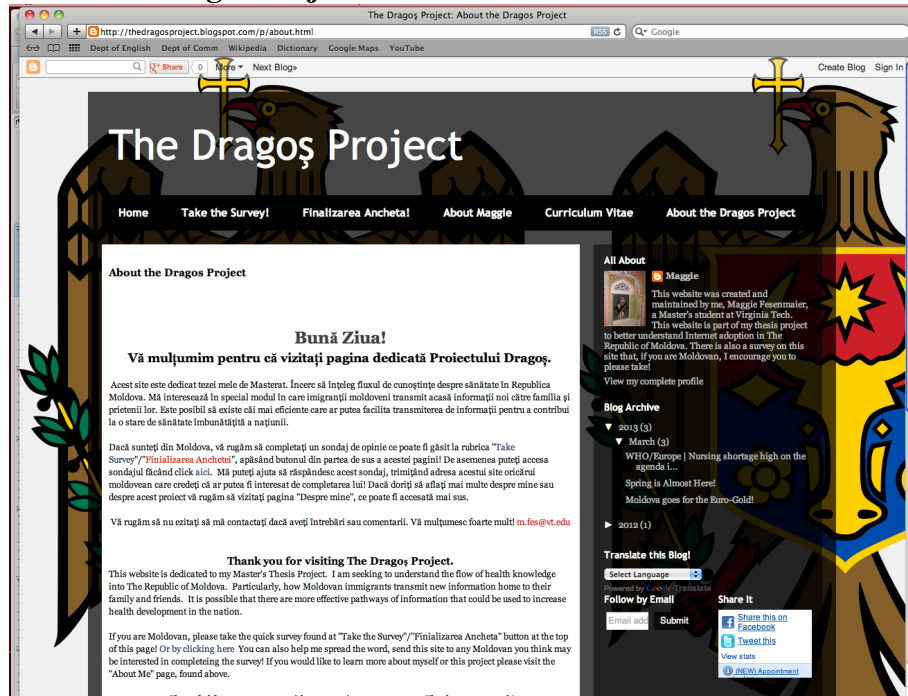
Aici inițial:

Ar trebui să aveți orice întrebări pertinente cu privire la această cercetare sau comportamentul său, și drepturile subiecte de cercetare ", și pe cine să contacteze în cazul unei leziuni legate de cercetare la subiect, apunea contacta:

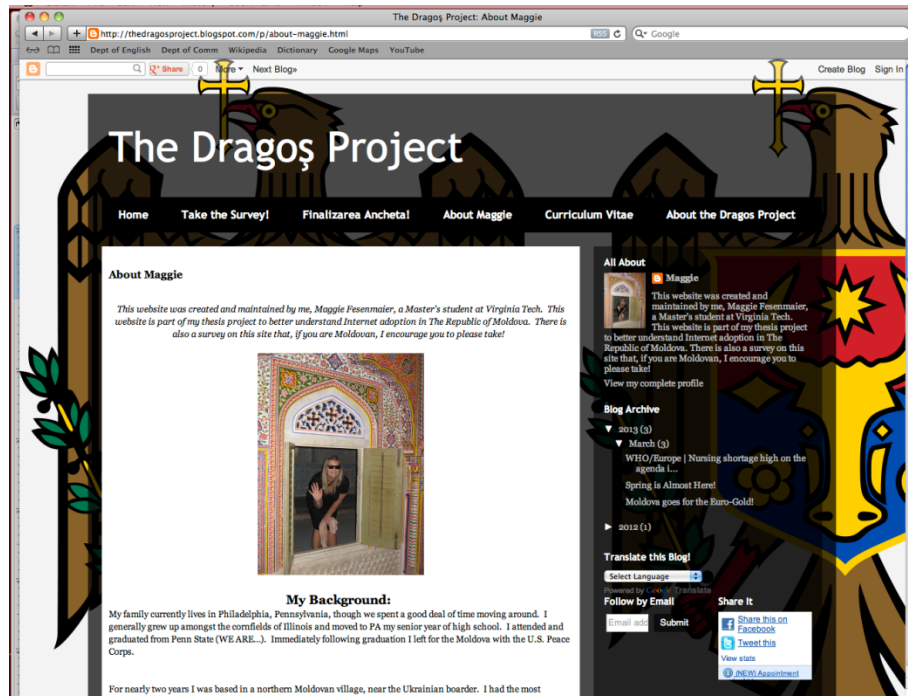
The right sidebar contains an "All About" section with a profile picture of Maggie, a "Blog Archive" section with links for 2013 (3) and 2012 (1), a "Translate this Blog!" section with a language selector, and a "Follow by Email" section with an email input field and a "Submit" button. There are also social media sharing options for Facebook, Twitter, and a link to the AEWI Appointment.

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About the Dragoș Project:



About the Researcher:



Website Statistics:

(as of 4/21/13)

Total Pageviews: 1,427

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Table 11. Dragos Audience

Entry by Country:	Pageviews:
United States	833
Moldova	173
Canada	74
Italy	56
Russia	35
United Kingdom	33
China	21
Germany	20
Romania	19
Netherlands	15

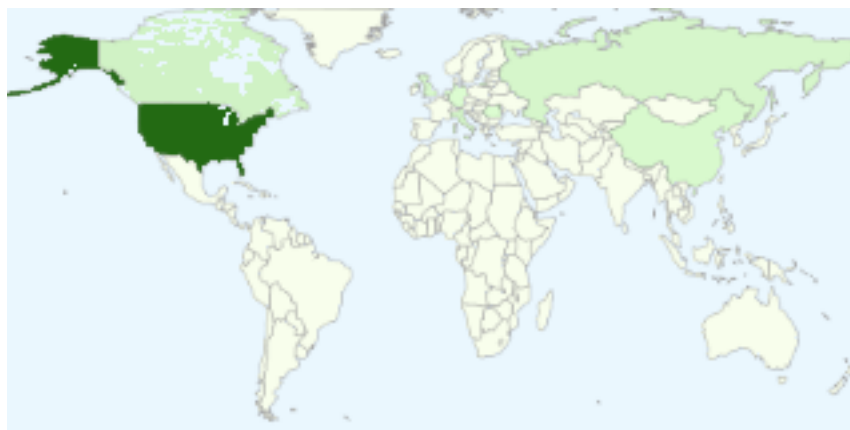


Table 12. Dragos Project Traffic Sources

Referring Sites by Entry:	Pageviews:
www.facebook.com	206
Goo.gl	35
m.facebook.com	16
www.google.com	11
Whois.domaintools.com	10
t.co	9
www.filmhill.com	9
www.odnoklassniki.ru	8
www.thedragosproject.org	8

Appendix D

Study 2: Interview Questions

English

1. Have you ever sent money home?
 - a. What amount?
 - b. What is the reason for sending money home?
 - c. Who did you sent money?
2. Have you sent anything else than money home?
 - a. If so, what was it?
 - b. Why did you send that/those particular item(s)?
 - c. How do you think that your family in Moldova used these items?
3. How do you feel about sending money/items home to Moldova?
4. How long did it take you to start sending money/items back to Moldova?
5. Do you feel pressured to send money/items back to Moldova?
6. Do you use the Internet here?
 - a. What for?
 - b. How often?
 - c. How do you have access to the Internet?
7. Do you use the Internet to seek information?
 - a. What kinds of information do you look for online?
 - b. Do you typically trust the information you find online?
 - c. Do you ever tell your family or friends about the information you have learned on the Internet?
 - d. What influences your decision to pass along information?
8. Do your family and friends use the Internet?
 - a. Who do you think taught them?
 - b. Do you think they like it?
 - c. What do they use it for?
 - d. How do they have access to the Internet?
9. What do you consider major health problems in Moldova?
 - a. Since living in The United States/Canada have you learned ways to prevent or protect against those health problems?
 - b. If Yes: What were they?
 - c. If Yes: Have you told your family and friends still living in Moldova?
 - d. If No: Why have you not sought that information?
 - e. If No: What would promote you to search for that type of information?

Romanian:

1. Ați trimis vreodata bani acasă?

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- a. Ce suma?
 - b. Din ce motiv ati trimis bani acasă?
 - c. Cui i-ati trimis bani acasa?
2. Ati trimis altceva in afara de bani acasă?
- a. Daca da, ce anume?
 - b. De ce ati trimis aceste lucruri/obiecte?
 - c. Cum credeți că familia dumneavoastra din Moldova a folosit aceste lucruri?
3. Ce simtiti/credeti despre trimiterea de bani/obiecte acasă în Republica Moldova?
4. Cât timp v-a luat pentru a începe sa trimiteti bani/obiecte acasa în Moldova?
5. Va simtiti presat cand trimiteti bani/obiecte acasa în Republica Moldova?
6. Folositi Internetul aici in Statele Unite?
- a. Pentru ce?
 - b. Cât de des?
 - c. Cum aveți acces la Internet?
7. Folositi Internetul pentru a cauta informatii?
- a. Ce fel de informații cautati on-line?
 - b. Aveti încredere în informațiile pe care le gasiti de obicei pe Internet?
 - c. Le-ati spus vreodata prietenilor sau familiei despre informațiile pe care le-ati gasit pe Internet?
 - d. Ce va influenteaza sa transmiteti mai departe informații?
8. Familia și prietenii dumneavoastra folosesc Internetul?
- a. Cine credeti că i-a învățat?
 - b. Credeti că le place?
 - c. Pentru ce folosesc Internetul?
 - d. Cum au acces la Internet?
9. Care credeti ca sunt problemele majore de sănătate în Republica Moldova?
- a. De cand locuiti în Statele Unite ale Americii/Canada ați aflat despre metode de a preveni sau de a va proteja împotriva acestor probleme de sănătate?
 - b. Dacă da: Care au fost acestea?
 - c. Dacă da: Le-ati spus familiei si prietenilor care încă mai locuiesc în Republica Moldova despre aceste metode?
 - d. Dacă nu: De ce nu ați căutat aceste informații pe Internet?
 - e. Dacă nu: Ce v-ar determina sa cautati acest tip de informații?